Development Opportunities in the Occupied Territories

(West Bank and Gaza Strip)

Water and Sanitation

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PREFACE

This analysis of the water and sanitation sector was prepared by Policy Research Incorporated (PRI) as part of an assessment of development opportunities in the Occupied Territories. That assessment, initiated in December, 1991, included a review of eight sectors: agriculture, education, finance and credit, health, industry, infrastructure, trade, and water and sanitation. The process by which the reports were developed included:

1) on-site data collection by two American development experts, Dr. Irene Jillson-Boostrom (Senior Technical Advisor) and Dr. Alan Richards (International Consultant);

2) the preparation of literature and information syntheses by Palestinian experts in each of the sectors (see attached list);

3) review of extensive documents across the sectors (including more than 300 documents from the Occupied Territories, Israel, donor organizations and relevant general development reports);

4) preparation of the draft analyses for each sector, with Dr. Jillson-Boostrom preparing those for health, industry, infrastructure and trade and Dr. Richards preparing those for agriculture, education, finance and water;

5) follow-up data collection and analysis by Dr. Jillson-Boostrom (to clarify issues and obtain additional data, when possible); and

6) preparation of the final development report for each sector and of the cross-sectoral analyses, by Dr. Jillson-Boostrom.

Each of the eight sectoral reports follows a consistent outline, as follows: executive summary of findings, introduction (including a discussion of the importance of the sector for development and key issues, if any), sectoral status and trends, institutions involved in the sector, constraints to development, and development opportunities. Citations for data and information presented in the reports are included at the end of each report; the Executive Summary does not contain specific citations. In addition, each report includes two appendices: 1) *Context of Development in the Occupied Territories* (background relevant to all sectors), and 2) *Visions of a Sustainable Future,* (a discussion of the overall potential for development in the Occupied Territories). In order to contribute to the discussion of sectoral as well as cross-sectoral needs and development opportunities, a particular effort was made to describe the organization and function of each sector in the Occupied Territories insofar as possible.

The sectoral reports are intended to add to the resources available for those involved in development planning in the Occupied Territories. In reviewing these reports, it should be recognized that circumstances have limited the degree to which preparation of these documents has followed standard sector analysis procedures. Data limitations are discussed in each of the documents; such limitations exceed those that pertain in many developing countries. Curfews and strikes hamper data collection. Thus far the final draft documents have not been

reviewed by those involved in development planning and implementation in the Occupied Territories in order to ensure that the documents accurately reflect the reality of each sector. Nor is it possible to ensure that the complete range of opinion and all available data sources have been included, although every effort was made to do so.

The conclusions and recommendations presented in the sector analyses are intended to serve as examples for Palestinians, donors and others involved in development planning for the Occupied Territories. It is recognized that each entity involved in this process will have its own specific world view and development goals to which these recommendations may or may not relate. The goals included in this report (in Appendix II, Table 2), based on general development goals derived from World Bank documents and other sources, are intended to stimulate ideas and discussion.

Acknowledgments

Preparation of this report on water and sanitation in the Occupied Territories would not have been possible without the contributions of many individuals. Dr. Alan Richards, then Professor of Economics at the University of California, Santa Cruz, contributed the initial draft of the water and sanitation sector report, which served as a basis for several sections of the report prepared by Dr. Jillson-Boostrom. Dr. Hisham Awartani facilitated access to important data resources in the West Bank; Mr. Fayez Al Wahaidi facilitated access to data resources in the Gaza Strip and prepared a report on non-governmental organizations in the Gaza Strip. Dr. Marwan Haddad and Dr. Yousef Abu Saffiyeh each prepared a report on water and sanitation in the Occupied Territories. Ms. Monica Awad provided invaluable assistance with respect to identifying and collecting relevant documents, making logistical arrangements and performing other research and administrative tasks.

Cora Gordon and Christine Baluck, both of Policy Research Incorporated, assisted in compiling information resources available in the United States, reviewed and commented on multiple drafts of the reports and assisted in the production of the document. Dr. Mae Thamer, also of PRI, reviewed and commented on the initial draft prepared by Dr. Jillson-Boostrom. Sara Davidson edited the final draft of the report and designed and executed the desktop published version.

I am also most grateful to the representatives of donor organizations and international private voluntary organizations (PVOs), and to the more than 100 Palestinians who agreed to be interviewed. All provided information and ideas necessary for these analyses and engaged in constructive discussion of development opportunities in the Occupied Territories. I trust that this report will be useful to them and to all those involved in efforts to promote sustainable development in the West Bank and Gaza Strip.

Irene Jillson-Boostrom, Ph.D.
Clarksville, Maryland
October, 1992

ACRONYMS

ACC	Agricultural Coordinating Committee
ACCI	Arab Development and Credit Company
ACDI	Agricultural Cooperative Development Institute
ADCC	Arab Development and Credit Company
AGREXCO	Israeli State-owned Agricultural Marketing Company
AID	Agency for International Development
AIE	Arab Insurance Establishment
AMIDEAST	American Mideast Education & Training Services
ANERA	American Near East Refugee Aid
CBS	Central Bureau of Statistics
CCC	Civilian Conservation Corps
CD	Cooperation for Development
CDP	Cooperative Development Project
CIS	Commonwealth of Independent States
CIVAD	Civil Administration
CRS	Catholic Relief Services
CWA	Communications Workers of America
DOA	Department of Agriculture
DOS	Department of State
EC	European Community
ECWA	Economic Commission for Western Asia
EDG	Economic Development Group
FTA	Free Trade Agreement
GCMHC	Gaza Community Mental Health Committee
GDP	Gross Domestic Product
GFTU	General Federation of Trade Unions
GHS	Government Health Services
GNP	Gross National Product
GOI	Government of Israel
ICARDA	International Center for Agricultural Research in the Dry Areas
ICD-9	International Classification of Diseases
ICS	International Christian Society
IDF	Israeli Defense Force
ILO	International Labour Organization
IMR	Infant Mortality Rate
JCO	Jordanian Cooperative Organization
JD	Jordanian Dinar
JFPP	Jordanian Family Planning Program
MAP	Medical Aid to Palestinians
MCH	Maternal and Child Health
MOI	Ministry of Interior

NGO	Non-Governmental Organization
NHI	National Health Insurance
NICU	Neonatal Intensive Care Unit
NIS	New Israeli Shekel
OECD	Organization for Economic Co-Operation and Development
OT	Occupied Territories
PARC	Palestinian Agricultural Relief Committee
PFS	Patients Friends Societies
PFWAC	Palestinian Federation of Women's Action Committees
PHC	Primary Health Care
PLO	Palestinian Liberation Organization
PRCS	Palestinian Red Crescent Society
PVO	Private Voluntary Organization
SAI	Statistical Abstract of Israel
SCF	Save the Children Federation
SCHC	Society for the Care of Handicapped Children
TDC	Technical Development Center
TDG	Technical Development Group
TDP	Trade and Development Program
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UK	United Kingdom
UNESCO	United Nations Educational, Scientific & Cultural Organization
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNRWA	United Nations Relief and Works Agency
UPMRC	Union of Palestinian Medical Relief Committees
USG	United States Government
VAT	Value Added Tax
WHO	World Health Organization
WUB	Workers' Unity Block

I. EXECUTIVE SUMMARY

While the Israeli Water Authority is ultimately in control of all water resources in the Occupied Territories, and the Israeli Water Company (the Mekorot) is the distributor of water derived from Israeli-controlled sources, Palestinian municipalities and non-profit water authorities manage distribution networks. However, relatively few engineers work with any of these authorities, and there are only minimal in-service training programs for any of the staff. Moreover, the management staff of these water authorities have virtually no experience or training in the economics of water management. There are no linkages with water supply management across the Occupied Territories, and only minimal linkages between water authorities and the small-scale, largely donor-funded water and sanitation projects. Further, only minimal linkages exist among the water authorities, non-government organizations (NGOs) involved in water and sanitation, and organizations involved in health, agriculture and industry--all sectors with inextricable links to water supply and usage. Few Palestinian institutions have the capacity for water quality testing, and few donors have funded studies of water quality. Finally, the water authorities have scant resources for use in repair and maintenance, resulting in general disrepair of many of the water systems. As a result, it has been estimated that more than half of the water supply passing through the system in the West Bank is lost through leakage or waste.

The West Bank water resources serve not only Palestinians in the area (whose domestic water consumption is approximately 27.6 million cubic meters (mcm) per annum), but also settlers (whose annual use is not available) and Israeli residents (who use an estimated 450 mcm per annum). Per capita domestic consumption averages 35 cubic meters in the Occupied Territories and 100 cubic meters in Israel. In fact, Israel depends on West Bank aquifers for approximately 25% to 35% of its water use, depending on the assumptions as to the total volume of water use. Current figures for per capita use in the West Bank are misleading, as many of the water departments pump the water supply for a total of only four to nine hours per week. Thus, the distribution of water (i.e., through pumping of the supply) does not necessarily reflect the demand (if pumping were unrestricted). Some analyses assume that there may not be an actual water shortage in the West Bank. However, in addition to recognition of the "forced reduction" in demand, of considerable concern is the rapidly rising population in the area. Even without a larger influx of immigrants (both returning Palestinian refugees from outside the Occupied Territories and Israeli settlers), the population in Israel and the present Occupied Territories is expected to nearly double in the next 15 years.

The cost of water in the West Bank varies considerably by location. For example, the cost of water in Nablus is estimated at 40% of the cost of delivery, while the cost in Ramallah is estimated at 158% of delivery cost. Farmers pay approximately half of the delivered cost of water and receive a number of other agricultural subsidies which do not serve to encourage water-saving agriculture. Settlers pay approximately one-third the cost of water; one-third is subsidized by the government and one-third is paid by external donors.

Water supply in Gaza is markedly different from that in the West Bank. Current levels of water utilization in Gaza are clearly unsustainable and are inflicting

serious damage on the aquifer. While infiltration of irrigation run-off and of waste-water (10-20 mcm) could be considered important water sources, each poses serious water quality issues: water draining from the east has already usually been used at least once in the chemical-intensive Israeli Negev agriculture, and Gazan agricultural water run-off also contains high levels of pesticide, herbicide, and fertilizer residues. Use of untreated waste water is currently a major problem in Gaza, as raw sewage and septic tank overflow seeps into and pollutes the groundwater. Substantial waste water treatment projects would be required to render this water source useful.

Water consumption in the Gaza Strip is estimated at 20.2 mcm per year. Irrigated agriculture consumes the most water in the Occupied Territories. About 5% of agricultural land in the West Bank is irrigated, compared with some 60% of Gaza farm land and about 49% of Israeli farm land. In the past, Israel has used 75% of water resources to which it has access for irrigated agriculture, with the GOI subsidizing nearly 50% of the cost. Current Israeli policy is to reduce agricultural water subsidies in 20% increments each year for the next five years.

In addition to subsidies for Israeli farmers and settlers, the Palestinian production of water-consuming crops also contributes to inappropriate water demand and use. In the Gaza Strip, for example, more than one-third of agricultural land is planted with citrus and flowers, both crops which consume high levels of water.

Several approaches to increasing the water supply have been discussed in international, regional and bilateral meetings, including for example, large-scale desalinization projects, importation of water from the Nile in Egypt and importation through the "Peace Pipeline" from Turkey. The latter two projects are considered by many to be impractical for political as well as technical reasons, and they face considerable obstacles in their own countries. Desalinization, while initially expensive, is being considered by both Israeli and Palestinian engineers and planners. The options which are more feasible and less costly include rainwater collection and sewage treatment and effluent use. While not without problems, in combination with substantial improvements in demand they could contribute to improvements in water resource availability and use.

Table 1, found on page 23 of this report, presents a summary of conclusions and recommendations for water and sanitation.

II. INTRODUCTION

A. IMPORTANCE OF WATER AND SANITATION FOR DEVELOPMENT IN THE OCCUPIED TERRITORIES

The importance of water supply and use and of sanitation with respect to development in the Occupied Territories cannot be overemphasized. Aside from the historic political issues inherent in conflicts over water rights, the availability of a clean water supply and adequate sanitation have significant health and economic impacts. The health impacts, including notably diarrheal disease (which worldwide results in more than two million deaths annually and which is a leading cause of morbidity and mortality in the Occupied Territories) are avoidable and costly. The direct and indirect economic impacts are many, including:[1]

* lost productivity resulting from both health effects of unsafe water and time spent in water collection;

* costly development of large-scale alternative means of obtaining potable water (e.g., desalinization plants); and

* high cost to individuals, industry and society of investments in disparate and individual solutions to both water supply and waste disposal in comparison with central public systems.

In recent years, the growing concern for economic, health and social costs of inadequate and unsafe water supply and sanitation has given rise to a number of innovative projects which have shown demonstrably positive benefits (including economic benefits) to agriculture, industry and to the public and private sectors in general.[2] However, according to the recent World Bank report on Development and the Environment:

> "In most countries management of water resources is fragmented ... and is done by 'command and control'... The challenge is to replace this system with one that recognizes the unitary nature of this resource and its economic value and that relies heavily on prices and other incentives to encourage efficient use of water."[3]

This challenge raises myriad complex issues for all countries, including, for example, appropriate pricing policies for residential, agricultural and industrial use and the need to alter demand patterns, in general, and agricultural water use specifically. The latter is particularly difficult in historically agricultural societies which have scarce resources on which to base an industrialized economy.

In the Occupied Territories, water-related issues, which are difficult under any circumstances, are rendered highly complex given that the West Bank water resources serve not only Palestinians in the area but also settlers in the West Bank and Israeli residents. It has been estimated that the combined water deficit of Israel, the Occupied Territories and Jordan is 300 mcm annually.

The primary source of water in the Occupied Territories is rainfall, which, after evaporation, is derived from groundwater sources using six major underground

aquifers in the West Bank and multiple sub-aquifers in the Gaza Strip. The sources of surface water include the Jordan and Yarmuk Rivers, in addition to the Dead Sea, the Mediterranean Sea and various springs and seeps.

The total domestic water supply made available to the West Bank in 1989 was estimated at 110 mcm, with a per capita consumption estimated at 35 cu.m/annum. In the Gaza Strip, the total estimated supply made available to Palestinians was 90 mcm, with per capita consumption estimated at 35 cu.m/annum.[4] However, estimates of total available water supply vary widely, as is discussed in Part III of this report.

Approximately 60% of groundwater supplies for Israel derive from the two largest aquifers:[5] 1) the Yarqon-Tanninim Aquifer (shared with the West Bank; 94% of water from this aquifer was used in Israel in 1988[6]); and 2) the Coastal Plain Aquifer (which borders on the Gaza Strip). The Jordan River basin provides Israel with approximately 35% of its fresh water potential.[7] Although it represents a small proportion of water sources, Israelis re-use about 65% of wastewater, primarily for irrigation.[8] Comparatively, Israelis consume far more water resources than do Palestinians: 450 mcm/annum in 1988, with per capita annual consumption 100 cu.m, nearly three times the per capita use of Palestinians in the Occupied Territories.[9] The consumption rate for settlers is not available. The scarce water resources of the Gaza Strip also serve both Palestinians and Israeli settlers.

As is true in many countries, irrigated agriculture consumes the large proportion of water in Israel and the Occupied Territories. Accordingly, it is here that the major savings can be made. Notably, a far higher percentage of Israeli agricultural land is irrigated than that in the West Bank, but less than that in the Gaza Strip--which has far fewer water resources. About 49% (2,153,000 dunums) of agriculture in Israel is irrigated, compared with 5% (97,350 dunums) in the West Bank and 60% (114,000 dunums) in the Gaza Strip (one dunum = .23 acres).[10]

The economic, environmental and health aspects of water resources pale in comparison with the political issues which are both cause and effect of the water crisis in Israel and the Occupied Territories. One could conclude that "enlightened self-interest would lead the states of the region to cooperate in maximizing the efficient utilization of existing resources and in developing additional sources of supply."[11] However, as Gruen has suggested, history has not demonstrated that nation states act on such principles. Notably, however, during the multilateral session of the Middle East Peace Conference, held in January, 1992, a special working group on water resources was initiated and met in May, 1992. That working group, which included Palestinians as well as representatives of countries throughout the region and from the U.S., Europe and Japan, has the potential to serve as a focal point for the many complex issues which must be addressed and to provide a mechanism for assembling the full range of data available with respect to water and sanitation concerns. This latter point is significant for planners and decision-makers.

Obtaining accurate data on water supply and demand and on related health and socioeconomic indicators is difficult under the best of circumstances. In the Occupied Territories, the intrusion of politics into discussions of water supply and

demand affect data collection, analysis and presentations, making it extremely difficult to determine what data are sufficiently accurate to use as the basis for discussion. Moreover, the Mekorot, the Israeli Water Authority, is ultimately in control of all water resources in the Occupied Territories, and the Civil Administration (CIVAD) has approval authority over all water and sanitation projects, including those which are donor-funded. Palestinian municipalities and non-profit water authorities manage distribution networks, but within the context of decision-making authority by the Mekorot and the CIVAD. This decision authority also extends to availability of data and information.

In this report, the full ranges of estimates of supply and demand are provided, insofar as possible, with caveats where appropriate. Because of the significant differences between water supply in the West Bank and Gaza Strip, sectoral trends in these two areas are described separately. While it would be beneficial to consider related environmental issues (e.g., air quality, industrial pollution of water supplies), these data are scarce and the data collection which would have been required was beyond the scope of this sectoral analysis.

B. KEY SECTORAL ISSUES

In order to place the presentation of the sectoral trends, constraints and opportunities in context, two key sectoral issues are addressed briefly: the politics of water in the Occupied Territories and subsidies provided to Israelis and to settlers in the Occupied Territories.

B.1 The Politics of Water

Few subjects in the Occupied Territories are more politically charged than water policy; access to water is closely linked to land rights, and disputes over the latter constitute the core of the Palestinian-Israeli conflict. Although wastewater and sanitation issues have only recently begun to be addressed (either through studies or ameliorative development projects), that issue is also political, Palestinians perceive it as closely related to Israeli settlements and wasteful Israeli residential practices, and Israelis perceive it as a result of wasteful Palestinian industrial and residential practices.

Palestinians perceive GOI prohibitions and restrictions on their drilling wells as discriminatory. They believe that settlers suffer from no such limitations, nor do Israeli farmers over the Green Line (the 1967 border) whose activities rely on the common aquifers. Israelis counter that international water law sanctions "historical users," and that they have been using the aquifer since before 1967. However, the Palestinians and others argue that Palestinians have as much "historical" right as do the Israelis (if not more) and that in any case, the Palestinians never signed any agreements on use.

In part because of the politics of water in the Occupied Territories and the distrust of Israeli data, Palestinians are highly suspicious of restrictions against overpumping groundwater, however justified they may be on technical grounds. For example, if one treats the Yarqon-Tanninim aquifer as a common-property resource, then some form of collective action is necessary to manage this resource. Unfortunately, because Palestinians do not regard the Israeli authority, Mekorot,

as legitimate, and because they perceive that this institution discriminates in favor of Israelis, Palestinians denounce restrictions on drilling. Yet, some restrictions would be necessary under any political arrangement--particularly in the Gaza Strip.

The types of ameliorative public and private policies recommended in the previously-cited World Bank report assume the ability of a government to make decisions with respect to a unitary economy, to establish linkages with its private sector, and to engage in negotiations with other countries. In economic terms, it assumes that only if water rights are tradeable can an efficient allocation of water emerge. This is not now possible in Israel and the Occupied Territories, which share the same water sources but dispute rights to these sources. Any system of trading water (or any commodity, for that matter) requires an initial specification of property rights.

B.2 Israeli Water Subsidies

Israeli farmers, as is true of their American and European counterparts, benefit from a wide variety of output and input subsidies. Subsidies on outputs raise the marginal value product of water, thereby increasing demand. Subsidies on inputs which are complementary to water have the same effect. However, subsidized agricultural water use contributes to wasteful practices in any country. Israelis' inefficient water use thus directly impacts upon West Bank Palestinians, whose consumption is not subsidized in every jurisdiction.

Israeli agricultural water use is subsidized both directly and indirectly. A crude estimate of direct subsidies may be obtained by contrasting the price of water to farmers with Mekorot's estimate of the cost of supplying water. According to one estimate,[12] Israeli farmers pay about $0.18/cu.m. at the average 1990 exchange rate, reportedly less than 50% of the cost to Mekorot, the Israeli Water Company, of supplying the water.[13] Because 25%-33% of Israeli water comes from aquifers located in and shared with the West Bank, Israeli over-use of water significantly constrains the expansion of irrigation by Palestinians in the West Bank.

In recognition of the problem of excess water use, the Israeli government has taken administrative steps to curb agricultural water demand in recent years, including increased use of drip irrigation (invented by Israelis). It has been estimated that Israeli water use per irrigated acre fell some 20% from 1967 to 1981.[14] During the past decade, Israeli agricultural water use has increased very little, while real agricultural output has risen from approximately $1.7 billion to about $2.5 billion in current U.S. dollars.

Current Israeli policy is to reduce water subsidies in 20% increments each year for five years. Such a policy shift is one of the most effective and efficient means of solving any "water shortage" in the West Bank and is in the interest of the overwhelming majority of Israelis and of all Palestinians. Notably, Palestinian farmers currently receive no subsidies for water use, for complementary inputs or for outputs; indeed, their water use is greatly restricted by numerous CIVAD regulations. This places them at a competitive disadvantage relative to Israeli farmers and to those in Jordan as well. (For a discussion of Palestinian agriculture, see other companion report, "Agriculture in the Occupied Territories.")

A final issue with respect to subsidies should be addressed. Settlers consume an estimated 25% of the total water in Gaza, although they are estimated at 3,000-5,000 individuals; this compares with more than one million Palestinians using the remaining 75% of the water. In view of the severe water scarcity in the Gaza Strip, continued subsidization of water to Israeli settlers is not only economically inefficient, it is ecologically destructive. From this standpoint, subsidization policies hasten the destruction of the aquifer on which settlers as well as Palestinians depend. Some have argued that the water shortage in the West Bank and Israel would largely disappear if Israeli agricultural producers were not heavily subsidized. On the other hand, especially because scant analysis of future demand given population growth has been conducted, it is not possible to make a categorical statement that there then would be no water shortage in the West Bank.

III. SECTORAL STATUS AND TRENDS

This section will present a synopsis and synthesis of analyses of the water balance in the Occupied Territories and Israel. The task is impeded by both conceptual and data difficulties. Analysts do not always distinguish between water "use" and "consumption." These concepts are different: for example, all water which goes through a turbine is "used" to generate electricity, but only a small percentage is "consumed" or rendered unavailable for down-stream users. However, because "use" typically reduces water quality, even if it is not "consumed," most figures appear to refer to use, rather than consumption.

A second conceptual difficulty is more fundamental. The analysts who calculate water balances are usually engineers, who tend to present supply and demand for water as fixed quantities which are independent of price. This presents an unbalanced picture, but in the absence of rigorous water economics studies there is no alternative to presenting these numbers. However, readers should keep in mind the conceptual deficiencies which underlie these estimates.

A. WEST BANK WATER

A.1 Water Supply

Estimates of the availability of water from the principal source of water supplies in the Occupied Territories (rainfall-minus-evaporation) range from 600 mcm/annum[15] to 900 mcm/annum.[16] See Table 2 below. Figure 1 shows the principal drainage basins of the West Bank. The Yarqon, Alexander and Hadera catchment areas replenish the Yarqon Tanninim aquifer; rainfall in the Qishon basin supplies the Northeast aquifer; while the basins to the east of the Mediterranean/Dead Sea drain into the Jordan Valley aquifer.[17] The first of these discharges water to the coastal plain at an estimated rate of about 335 mcm/year, the second at 140 mcm, and the third discharges about 25 mcm/yr into the Jordan Valley. Of considerable concern is evidence that groundwater is being exploited too rapidly in Israel, with diminishing supply for all residents of the area. For example, the water table in the Yarqon-Tanninim aquifer has fallen in recent years, at a rate of 0.3-0.4 meters per year.[18]

Table 2
Estimates of the Supply of Rainfall-minus-evaporation Water Supplies for the Occupied Territories and for Israel (in millions of cubic meters - MCM - per year)

Estimates in MCM

Water Source	WEST BANK		GAZA STRIP					ISRAEL		
	# 1	# 2	# 1	# 2	# 3	# 4	# 5	# 1	# 2	# 3
Rainfall	2250	2800	110	144	100	--	--	--	--	--
Evaportation	1530	1900	66	--	--	--	--	--	--	--
Total Supply	720	900	57-72	35	25	65	60	1610-1650	1500	2050
Proportion of supply..										
-- surface runoff	50	--	2	--	--	--	--	60-100	--	--
-- surface flow	22	176	--	--	--	--	--	--	--	--
-- groundwater discharge	648	724	42	35	25	--	--	950	--	--
-- Jordan River & Lake Kinneret	--	--	--	--	--	--	--	600	--	--

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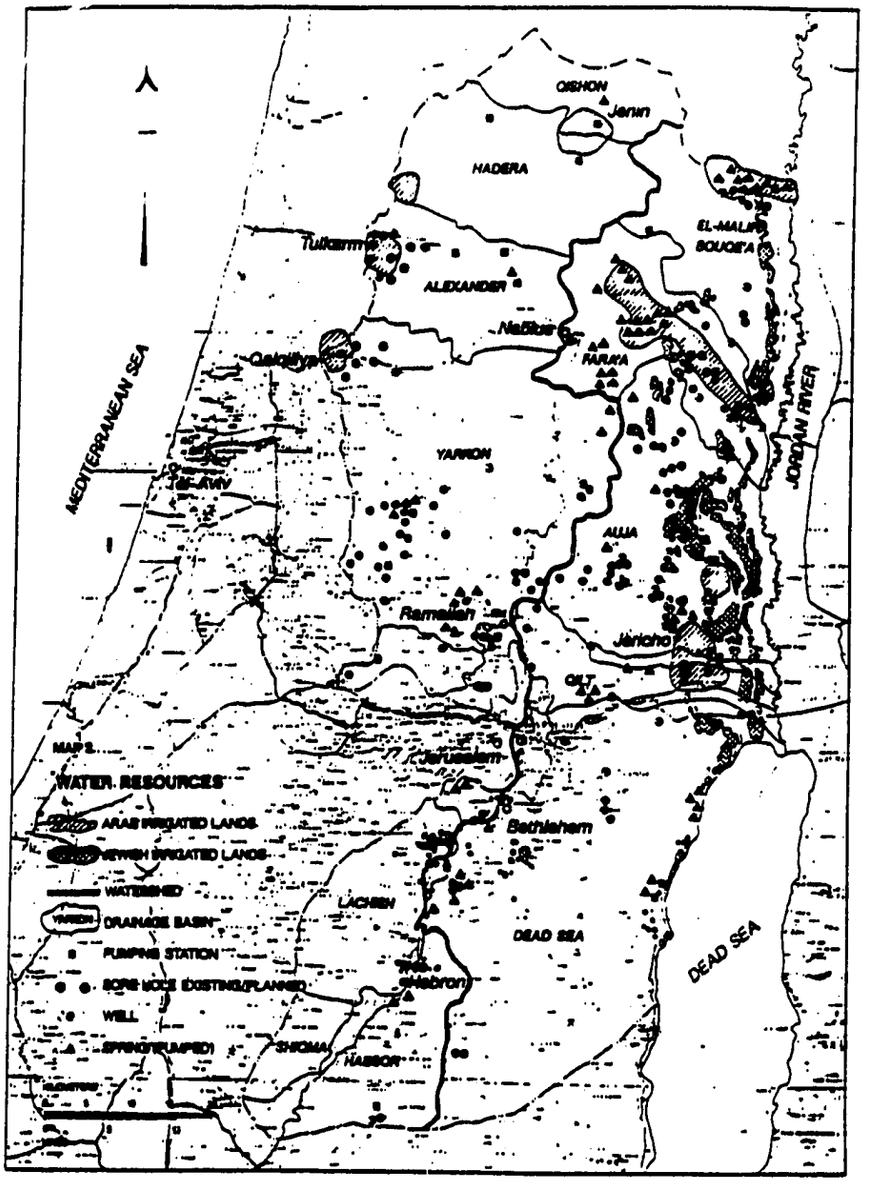
A.2 Water Demand

Current utilization of West Bank water in the West Bank, Gaza Strip and Israel is shown in Table 3. As usual, agriculture is the largest user of water (75-86%). As Figure 1 shows, most irrigated farm land is in the Jordan Valley or the tributaries of the Jordan River. A little over half (50-60%) of the water used by Palestinians comes from the Jordan Valley.[19]

FIGURE 1

WATER RESOURCES



Source: Benvenisti, M. and Khayat, S. West Bank and Gaza Atlas. Jerusalem: The Jerusalem Post for West Bank and Gaza Data Project; 1986.

Table 3

Highest and Lowest Estimates of Water Utilization for the Occupied Territories and for Israel, 1991 (in millions of cubic meters - MCM - p
(in millions of cubic meters - MCM - per year, various years in late 1980's)

Utilization	Estimates in MCM					
	WEST BANK		GAZA STRIP		ISRAEL	
	Lowest (1)	Highest (2)	Lowest (3)	Highest (2)	Lowest (1)	Highest (4)
Irrigated agriculture	100	100	70	130	1100	1300
Municipal & Industrial	15	30	29	20	550	560
Total	115	130	99	150	1650	1860

Sources

(1) Benvenisti, M. and Khayat, S. The West Bank and Gaza Atlas. Jerusalem: West Bank Data Project and Jerusalem Post; 1988

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Despite differing estimates of utilization, it is evident that the supply of water in the West Bank exceeds the quantity currently used by Palestinians alone. However, two additional demands on West Bank water exist. First, Israeli settlements in the West Bank consumed some 40-50 mcm/year in 1986,[20] of which 30 mcm was used by the Jordan Valley settlements. According to Benvenisti and Khayat, "by 1990, 60 mcm of water will be available to 30 Israeli agricultural settlements and 100 mcm for the total West Bank Jewish population...".[21] Tamimi estimates that settlements used some 65 mcm of water in 1991, 53 for irrigation and 12 for domestic use.[22] Note that when the data for Palestinian use (Table 3) are compared with these numbers, Israeli settlers (who number perhaps 120,000) in the West Bank are using nearly half as much water as the more than one million Palestinians who live there.

A second and far more important source of demand for West Bank water is Israeli use of the Yarqon-Tanninim and Northeast aquifers from wells inside the 1967 borders of Israel (the so-called "Green Line"). Israeli wells largely dating to before 1967 use 470[23] or 475 mcm[24] per year from these two aquifers. This constitutes between 25% and 35% of the total Israeli water use, depending on the assumptions on the volume of total water use (see Table 3). Total Israeli use of water originating as rainfall over the West Bank comes to approximately 535 mcm[25] or 570 mcm (using the settlement estimate of 100 mcm and setting use of the northern aquifers at 470 mcm).

The total Israeli and Palestinian use of water originating in the West Bank is then approximately 650-700 mcm/year. This rough estimate falls between the estimates of supply given in Table 2. It has been argued[26] that there is no shortage of water in the West Bank, even if current levels of Israeli use are taken as a given. However, these and other estimates ignore the artificially low "demand" for water by Palestinians. In reality, the "demand" is controlled by the CIVAD, which determines what quantity of water will be available to Palestinians in a variety of ways. For example, it is not uncommon for water supplies to be halted (i.e., by restricting flow to Palestinian communities) and for small-scale water projects to be delayed significantly and to be altered to cause reduced water flows to the intended (Palestinian) beneficiaries.

A.3 Sanitation and Water Quality

Although data are scarce, there are some indications of significant water quality problems in the West Bank. For example, in 1991 there was a reported case rate of 246/100,000 for dysentery (amoebic and bacillary) in the West Bank.[27]

A high rate of health problems associated with poor water quality and sanitation facilities should not be surprising. Even as recently as 1990, approximately 180 West Bank villages with some 355,300 inhabitants were not served by a central water supply system,[28] and therefore depended on local wells and other sources that were not protected from contamination. Moreover, although wastewater systems exist in all cities and most towns, these systems do not always cover the entire municipal area. Even in the Jerusalem District, in which the collection system is managed by the Israeli Municipality, only 85% of all homes are connected to the system. In Ramallah and El Bireh, and in Nablus, only 75% of the population is connected to sewer mains; in Hebron, 65% of the population is connected.[29]

About 40%-50% of urban wastewater, most village and rural wastewater and a reportedly large but undocumented proportion of wastewater from UNRWA refugee camps is disposed of using septic tanks, latrines, subsurface drainage systems or percolation pits or is simply allowed to flow out into open channels.[30] Much of this wastewater is used for irrigation in the West Bank and in Gaza, creating considerable health hazards for farmers and consumers. The only wastewater treatment plant in the West Bank is in Ramallah. The plant, which became operational in the early 1970s, has not yet been evaluated for wastewater characteristics or management efficiency.[31]

As is true elsewhere, the West Bank has a serious and escalating solid waste disposal problem. Although municipalities, which have responsibility for solid waste disposal, have made efforts to organize the refuse collection process, technologies lag far behind those of other areas, including Israel. Disposal of waste in landfills which border residential areas is problematic, as is the dumping of refuse in undesignated areas. Such dumping is particularly evident in rural areas where no land fill exists. No solid waste treatment plant exists, and there are no recycling systems.[32]

B. WATER IN GAZA

B.1 Water Supply

Water supply in Gaza is markedly different from that of the West Bank. Current levels of water utilization in Gaza are clearly unsustainable and are inflicting serious damage on the aquifer.

There are major differences in the estimates of water supply in Gaza (see Table 2). This is due to differences of opinion concerning:

1) assumptions on the percentage of rainfall which reaches the upper (sweet-water) aquifers, and

2) the sustainability/desirability of including additional sources such as "groundwater draining from the East" (perhaps 5-10 mcm/yr) or the infiltration of irrigation run-off and waste-water (10-20 mcm).[33]

The latter alternative resources pose serious water quality concerns: water draining from the East has usually been used at least once in the chemical-intensive Israeli Negev agriculture, and Gazan agricultural water run-off contains high levels of pesticide, herbicide and fertilizer residues. Waste water usage (described below) is currently a major problem in Gaza, as untreated raw sewage and septic tank overflow seeps into and pollutes the groundwater. Unless these sources are conceived of as potential future supply (i.e, after major projects for treatment and recycling are operative), their inclusion in "sustainable supply" is dubious. Notably, Haddad[34] explicitly describes the sources of supply in excess of groundwater recharge; other estimates rarely do so.

Sources also differ in their estimates of the percentage of rainfall-evaporation which recharges the aquifers. These estimates, however, do not range as widely as the estimates of "total supply," as discussed in the preceding paragraph. Estimates range from a high of 42 mcm to a low of 25 mcm, assuming recharge percentages of 38% and 25%, respectively.

B.2 Water Demand

As a comparison of Tables 2 and 3 shows, current water use in Gaza far exceeds estimates of sustainable supply. According to the most thorough study of Gazan water use carried out thus far, Palestinian agricultural and domestic water use in 1990 was some 29 and 65 mcm per year, respectively. Settlers in Gaza (estimated to be 5,000 in 1990) consume an estimated 30-60 mcm for agriculture.[35] The resulting total is roughly 140 mcm per year, which excludes settlers' domestic consumption. Current water utilization in Gaza is today four times above sustainable levels. By some calculations,[36] there is barely sufficient sustainable supply to cover municipal use in Gaza, with nothing left over for the major water user, agriculture.

The consequences of such overuse are grim: the fresh water aquifer is being rapidly depleted, leading to sea-water intrusion from the West and to the upcoming of the deeper brackish water aquifer from below and to the East. This is a dangerous situation which has serious long-run consequences for Gaza. It is easy to damage aquifers and very difficult to repair them, especially once salt water seeps into them. Many of Gaza's 1,900 artesian wells have already been closed because their water is too saline for human consumption.[37]

B.3 Sanitation and Water Quality

In Gaza, the case rate for dysentery (amoebic and bacillary) was 1,072/100,000 for dysentery; this is three times that of United Nations Relief and Works Agency (UNRWA) refugees in Jordan[38] and is indicative of serious water quality problems. Using World Health Organization (WHO) standards for testing drinking water in 50 wells in the Gaza Strip, Abu Safiyeh has estimated that as much as 85% of the water in Gaza wells is unfit for human consumption.[39] Gazan aquifers are further threatened by pollution from waste-water seepage. In spite of the fact that most of the towns in the Gaza Strip have wastewater collection systems,[40] only about 40% of all houses in the Gaza Strip are connected to a sewage system; the rest use unprotected boreholes and tanks for sewage disposal.[41] Of further concern is the fact that the existing sewage systems themselves are deficient. In Gaza City, for example, where about 80% of the houses are connected to the sewage system, the collected sewage is partially drained into the Mediterranean near Al-Shati Camp, while the rest is collected in lagoons south of Gaza City where it remains to evaporate or to percolate into the water table, polluting shallow wells in the area.[42] In the West Bank, the sewage is collected (and often discharged) without treatment, which can contribute to numerous health and water pollution problems. A similar situation occurs in Rafah.[43]

In spite of the fact that 65% of the population of the Gaza Strip resides in refugee camps, these camps, in contrast to towns in Gaza (see above), do not yet have fully functioning wastewater collection systems--some 25 years after the beginning of the Occupation. In fact, UNRWA refugee camps should be of considerable concern to health professionals and water and sanitation specialists. The camps have deplorable sanitary conditions. This is of particular concern given that (assuming a population of one million), the population density in the Gaza Strip is 2,777 persons/sq.km., making it one of the most densely populated areas in the world. As a result of the continued use of public latrines, overflowing of private latrines and open wastewater channels, there are large accumulations of raw wastewater which is used for irrigation of vegetables in the camps and nearby areas.

As is true with all societies, social constraints with respect to water and sanitation abound. One example in the Occupied Territories is particularly noteworthy. Reuse of properly treated waste water effluent could contribute as much as 25-30 mcm/year to Gaza's water supply.[44] Many farmers refuse to use effluent because they fear that Mekorot will reduce their fresh water allocation, because they dislike its odor, and/or because treated effluent is not suitable for all irrigated crops.

IV. INSTITUTIONAL ARRANGEMENTS

A. PUBLIC AND PRIVATE SECTOR ORGANIZATIONS

The foundation of water policy in Israel and in the Occupied Territories is the Israeli Water Law of 1959; authority for execution of the law rests with the Ministry of Agriculture. The Water Commissioner, who is responsible to both the Minister of Agriculture and the National Water Council (appointed by the Government), is charged with implementing the law.[45] Since the early 1970s, the Ministry of Health has had authority over drinking water quality and wastewater use.[46] Two other key Israeli agencies are:[47]

1) Tahal, the official planning agency with respect to water and sanitation issues; and

2) Mekorot Water Company, the national company through which approximately 65% of the water supply for Israel is sold.

Prior to 1967, a number of Palestinian municipalities had established water and engineering departments; since the Occupation, all decision-making authority has rested with the Civil Administration. The role of the municipalities has been limited to operation and maintenance of existing water distribution systems and of wastewater collection and treatment facilities for non-refugees; approval for all new projects rests with the responsible Military Officer at the CIVAD.[48] Four regional water authorities predominate in the West Bank; these are:[49]

* the Israeli Jerusalem Municipality, which supplies water to Jerusalem and its environs;

* the (Palestinian) Ramallah Water Authority, non-profit organization;

* the (Palestinian) Bethlehem Water Authority, which provides water to Bethlehem, Beit Jala and its environs; and

* the (Palestinian) Nablus Water Authority.

Each of the Palestinian water authorities and local authorities and municipalities either purchase water from the Mekorot or use their own sources. In the Gaza Strip, all water is supplied to non-refugees by municipalities and village councils from artesian wells; refugees in the Gaza Strip receive their water through UNRWA from wells located in the camps.[50] Palestinian village councils (which exist in approximately one-fourth of all villages) have responsibility for "initiation and development of public services in the village, including water supply and sanitation. Most villages without local councils have formed committees to assume this role".[51]

Several Palestinian NGOs are actively involved in water and sanitation projects, including for example:

* the Land and Water Institute,

* the Palestinian Hydrology Group,

* the Palestinian Agricultural Relief Committees (PARC), and

* the Agricultural Engineers Association.

In addition, there are 91 engineering offices and contractors in the West Bank and 21 in the Gaza Strip, many of which have been involved in conducting studies of water and sanitation in the Occupied Territories. Al-Najah University has the capacity to conduct water quality studies, as does Beir Zeit University, which has an environmental sciences laboratory.

B. DONOR INVOLVEMENT IN WATER AND SANITATION PROJECTS

Although donor support for water and sanitation projects is controversial (see Part VI), such support has been crucial in expanding the availability of water resources for Palestinians in the absence of Israeli efforts in this regard. According to a recent report of the United Nations Development Program, since 1986 the total amount of donor funding for water and sanitation projects has been just over $25.8 million, with one planned project (a hydrology survey) budgeted at nearly $1 million. An additional $832,183 has been allocated by donors for irrigation projects. These figures do not include Arab donors, for which data are not readily available.[52]

By far, the United Nations Development Program (UNDP) has been the dominant executing agency; 32% of all non-agriculture specific projects were funded through the UNDP. A.I.D. has donated just over $3.7 million (14%) through U.S. private voluntary organizations, primarily Save the Children (SCF) and Catholic Relief Services (CRS).[53] These figures should be viewed with caution, as they do not include all A.I.D.-funded projects.

Donors have been involved in water resource development (from large scale projects such as the Ramallah Water Tower to small scale wells). They have also supported large and small-scale sanitation projects. For example, UNDP has started several sewage schemes in Gaza, the largest of which is the Greater Jabalia area sewage scheme. This project has the dual purpose of improving sanitary conditions and reusing treated effluent as irrigation water. Given the critical water shortage in the Gaza Strip, continued investments need to be made in improved sewage treatment in Gaza, even though the estimated cost of such systems for the entire Strip could approximate $80 million.[54]

Donor-funded projects have not been without problems. Recently, for example, UNDP terminated without completion its Khan Younis sewage project because the settlers wanted to use the effluent. An A.I.D.-funded water tower in Ramallah, which is now located within a settlement area, cannot readily be accessed by

donors and is reportedly meeting the needs of both the settlement and surrounding army camps. One large ($1.2 million) stormwater drain project (funded by A.I.D. through American Near East Refugee Aid (ANERA) has faced constraints of design, management and local practices such as garbage disposal in the lagoon and discharge of tile factories' waste water into the lagoon. Activities to ameliorate this situation are currently underway.[55]

Many water and sanitation projects planned by donors or international private volunteer organizations (PVOs) have been delayed for long periods, denied, or have had radical changes required in their design, rendering them less cost-efficient and less useful for the intended beneficiaries. Only if donors and implementing agencies can be assured that their projects will reach the intended beneficiaries and would be favorably viewed by the local population should such projects be undertaken.

V. CONSTRAINTS TO DEVELOPMENT

Four types of constraints are highlighted: bureaucratic constraints, inadequate pricing structures, inadequate technical and managerial capacity to plan and execute water and sanitation projects, and paucity of data and particularly of economic analyses.

A. BUREAUCRATIC CONSTRAINTS

The most significant bureaucratic constraint, Israeli water subsidies for its population within the Green Line and for settlers in the Occupied Territories, is discussed in detail in Part I and will not be described again in this section. Additional constraints include:

* CIVAD delay and disapproval of urgently required water and sanitation projects;

* lack of access on the part of Palestinians, donors, PVOs and others to critical information required for planning and managing water and sanitation projects; data from Israel are judged by Israelis to be security-related. Other possible sources of data (e.g., municipalities) have very limited data collection and analysis capacity; and

* strict GOI control of water supply to Palestinians, which not only limits their access to potable water and to water for agricultural use but also distorts demand data.

B. PRICING STRUCTURES

The cost of water in the Occupied Territories differs considerably by locality. For example, the cost of water in Nablus (a municipal water authority) in 1990 was $0.676 per cu.m, approximately 40% of the cost of delivered water. In Ramallah, which has a non-profit water authority, the cost was $1.13 per cu.m, or 158% of the cost of delivered water, with the "excess" covering repair and maintenance and

water leakages.[56] Gazans pay an average of $0.37 per cu.m. for drinking water, with a range of $0.22/cu.m (Beit Hanon) to $0.52/cu.m (in Rafah).[57] In contrast, water charges for the domestic sector in Israel were $.26 per cu.m.[58]

Table 4 presents a recent estimate of the revenues, operating expenditures, and capital spending for potable water and sanitation in the West Bank and Gaza Strip. These services are underpriced; for sanitation, there is no direct charge, but only a connection fee.[59] Gaza's municipalities apparently face fewer problems of cost-recovery than do those in the West Bank. Indeed, it appears that revenues exceed expenditures for potable water and for recurrent costs of sanitation systems. However, given the poor sanitation conditions and inadequate services (see above discussion), the question of cost-effectiveness and efficiency of services vis-a-vis "return on investment" for the municipalities (or their funding agencies) should be further explored. Moreover, these municipal data have not been evaluated and the financial management of these, as well as the West Bank municipalities, is reportedly inadequate. Unless a reasonable pricing structure is in place, any investment in water infrastructure would not be likely to be sustainable.

Table 4
Income Generation, Capital Investment and Current Expenditures by Municipalities in the West Bank and Gaza Strip: Potable Water and Sanitation, 1987/88 (in NIS)

	Potable Water						Sanitation					
					Revenue (% of Expen.)						Revenue (% of Expen.)	
AREA	Income Generated	Investment Current	Capital	Total	Current	Total	Income Generated	Investment Current	Capital	Total	Current	Total
West Bank	8,294,867	8,680,329	2,280,911	10,941,240	96%	76%	614,184	1,630,774	573,643	2,204,417	38%	28%
Gaza Strip	4,330,249	2,661,973	1,237,199	3,899,172	163%	111%	321,456	149,466	518,028	667,494	215%	48%
Total	12,625,116	11,322,302	3,518,110	14,840,412	-	-	935,640	1,780,242	1,091,669	2,871,911	-	-

Sources: Data derived from: Government of Israel. Judea, Samaria and Gaza Area Statistics, Vol. XVIII, No. 2, Jerusalem: Central Bureau of Statistics; 1988, pp. 196-222; and

Haddad, M. Potable Water and Sanitation in the West Bank and Gaza Strip. Report Prepared for Policy Research Incorporated. Clarksville, MD; 1992

C. INADEQUATE MANAGERIAL CAPACITY

While precise figures with respect to human resources are not available, it is estimated that there are only 6-8 water and sanitation engineers with a BS degree or higher in the Occupied Territories. Most of the engineers employed with the municipalities are civil or mechanical engineers or specialists in biological or agricultural sciences. A large proportion of the staff of municipal water departments are technical and semi-technical personnel. For example, in the Nablus Municipal Water Department, 82% of the 171 total staff members fall within this category, while 12% are management/administrative staff and 6% are engineers.[60] In the Gaza Strip, 629 persons are employed by municipalities or local authorities in water and sanitation (not including pest control).

Palestinian municipalities do not have an adequate managerial infrastructure to design, implement, operate and maintain improved potable water and sanitation facilities. Moreover, the staff of the municipalities have had almost no opportunity for continuing education and therefore lack important knowledge and skills with respect to new resource-conserving technologies and managerial practices. Essentially no regular basic or advanced training is available. One of the few courses which has been offered for water engineers was sponsored by Save the Children Federation (SCF) and the Palestinian Association of Engineers in 1991.

D. PAUCITY OF ECONOMIC ANALYSES

The analysis and discussion of water issues in the Occupied Territories and Israel has been carried out primarily by engineers, as is true in most countries. Engineers tend to stress supply solutions at the expense of demand management and to treat "use" (demand) and "availability" (supply) as if they were fixed quantities, varying only with population for use or with rainfall for supply. The proposed pipeline from the Nile River to supply Gaza and the Negev and the "Peace Pipeline" from Turkey are two examples of the strategies which are based largely on this approach to analysis of water supply issues.[61]

Reports of water resources and sanitation in the Occupied Territories often contain only minimal economic data and analyses, including, for example, consideration of the role of prices in the allocation of resources. This is changing rapidly, as evidenced in recent meetings held to discuss water resources in the Middle East,[62] and in the Occupied Territories in particular.[63] As engineers and economists become increasingly involved in joint efforts to analyze data and explore alternative solutions to the crucial problems of water supply and use, and sanitation, they face the difficulty that necessary economic data often have not been collected or are of questionable validity.

VI. CONCLUSIONS AND RECOMMENDATIONS

While there is some dispute with respect to whether or not there is presently a water shortage in the West Bank, there is little dispute that a severe water scarcity exists in the Gaza Strip. There is also little dispute about the potential for future water shortages in the West Bank, given current population projections for the West Bank, Israel and Jordan. No question seems to exist with respect to sanitation: the situation is deplorable throughout the Occupied Territories. In terms of water quality, data clearly demonstrated that much of the available water in the Gaza Strip is unfit for human consumption. Preliminary health and water testing data indicate that water quality in the West Bank may also be poor, although given differences in water supply, it is not likely to be as grave a situation as exists in the Gaza Strip. In summary, the water and sanitation needs in the Occupied Territories are substantial, and those of the Gaza Strip are severe.

Notwithstanding these circumstances, under current political conditions, opportunities for large-scale assistance in water and sanitation may appear to be limited. The water supply is controlled by the Israeli Water Authority and the Israeli Water Company (Mekorot), although Israel has allocated very few resources for Palestinian water and sanitation projects, which therefore depend largely on support from multilateral or bilateral donors. Palestinian municipalities and water authorities have little responsibility other than for distribution of water and management of wastewater and solid waste disposal. The CIVAD maintains strict control over all water and sanitation projects in the Occupied Territories. Thus, the systems planning and management functions--vital to the formulation of sound water and sanitation policies--are outside the purview of Palestinian institutions and of donors which support them. Moreover, there is the possibility that any investments in water and sanitation projects could be used primarily by settlers. In both cases, assistance would be adverse to most donors' interests and intentions and contrary to the foreign policy of some bilateral donors.

Nonetheless, both short- and medium-term development needs of varying size and scope abound, and the clear and compelling need for assistance in this sector makes donor investment in water and sanitation projects critical and urgent. This section discusses opportunities for the Occupied Territories in general, followed by a discussion of opportunities for the Gaza Strip, specifically. Table 1 presents a list of recommendations linked to conclusions.

A. DEVELOPMENT OPPORTUNITIES: OVERVIEW

It is essential that agricultural use of water in the Occupied Territories be reduced, particularly in the Gaza Strip. Two options to reduce agricultural water demand should be followed; these are 1) reorientation of cropping patterns, and 2) increased use of water-saving drip irrigation.

1) *Reorientation of cropping patterns.* Citrus is a highly water-intensive crop; flowers, a crop introduced relatively recently to Gaza, use even more water. It is highly unlikely that production of such crops can continue on the current scale into the next century. A shift towards vegetables is highly desirable for water use efficiency, but this shift is hampered by

political considerations. Palestinians find that it is more difficult for the Israeli government to confiscate land which is planted in orchards than in annual or seasonal crops. This is consistent with some readings of Ottoman Land Law, the ostensible legal basis for land administration in the Occupied Territories.

2) *Use of Drip Irrigation.* Only a small fraction of irrigation in the Occupied Territories currently uses drip methods. The increased diffusion of this water-saving technology should be an urgent priority for donors. Savings on citrus production in Gaza, for example, could be considerable. However, drip irrigation is more expensive than other forms of irrigation and requires significant public investment in infrastructure and equipment such as the elevated water reservoirs which these pressurized systems require. Such systems also require sophisticated public and private sector management.

Additional water conservation projects which would alleviate the present and future problems of water and sanitation include:

* rain-water catchment, conservation lagoons to recharge depleted aquifers, and construction of small collection pools for rainwater draining off the roofs of houses and greenhouses; it is estimated that 7% of annual rainfall in Gaza runs off into the sea;

* wastewater treatment and solid waste disposal plants;

* recycling systems, including recycling plants which could be joint public/private sector ventures (these have important environmental impacts and in many areas have been income-producing);

* immediate education of farmers and others in the use of treated effluent for irrigation;

* analysis of groundwater wells and repair as necessary; and

* assistance in expanding water quality testing facilities.

Donors could also contribute to the amelioration of the West Bank water situation:

1) by providing technical assistance and training to Palestinians working in municipalities, non-governmental organizations and educational and training institutions (including universities) to ensure that they have the necessary skills and knowledge to plan, manage, and evaluate water and sanitation projects at a variety of levels;

2) by supporting the development of information systems and clearinghouses which will help ensure that Palestinians have adequate data on which to base regional, local and project-level water and sanitation plans; there are important opportunities for regional cooperation with respect to information and data;

3) by continuing policy dialogue with the Israeli government concerning the adverse consequences of continued Israeli agricultural subsidies on efficiency and equity in water resources; and

4) by supporting regional cooperation projects in water and sanitation among the Occupied Territories (or its autonomous entity), Jordan and Israel, including information systems (see # 2 above), recycling systems, and water supply projects.

Political change would considerably alter opportunities for donor assistance for water and sanitation projects in the Occupied Territories. In that case, donors could certainly provide capital, managerial and training assistance to municipalities for the construction of fresh and wastewater supply systems. However, before the design and initiation of such projects, a more thorough analysis of the demand for and supply of water (and related sanitation issues) is warranted. This should include thorough economic analyses, which were not obtained before the preparation of this report, but which would contribute important data and information to the planning process.

B. THE GAZA STRIP

While it may be socially difficult to do so, broad-based economic planning must take into account the need to shift the Gaza Strip from an agricultural to an industrial and service base over the long term. In the meantime, shifting to less water-intensive crops and utilizing less water-intensive agricultural techniques (see above) is critical. In addition to the other development opportunities in the sector mentioned in section A, several of the more general options to increase the supply of water in the Gaza area are briefly described here. Because they are not likely candidates for donor funding at this juncture, little detail is presented for these policy options.

1) Reverse-osmosis desalination of water from the deep aquifer offers some medium-term relief to the Gazan water crisis. Such water can be produced at a cost of approximately $.30-.35 per cu.m.[64] However, this is only a "stop-gap" measure, since the water to be treated is a depletable resource.

2) Sea-water desalination plants have been studied in the context of Gaza. UNDP conducted a preliminary study in 1990 on the construction of a dual purpose electric power and desalination plant, with outputs of 50 megawatts of electric power and 18 mcm of fresh water per year. One company has recently offered an alternative plan for a desalination plant. The estimated costs of fresh water were respectively $1.00 and $.48/cu.m. Such plants are, of course, both capital and energy intensive; the capital cost of one of the plants was $157.5 million.

3) In the late 1970s, Anwar Sadat suggested to Menachem Begin that Nile water could be transported to Gaza and the Negev.[65] The capital cost of supplying 105 mcm/yr of water to Gaza from this source has been estimated at $142 million, with the unit cost of the water (inclusive of investment at 12% interest) just under $.30/cu.m.[66] Such a project encounters two major problems:

-- It assumes that the riparian Nile states will have a surplus of water which they will be willing to sell to Gaza and Israel. This is very dubious. Egypt has ambitious land reclamation schemes, and its irrigation management system is plagued by deep-rooted inefficiencies (e.g., under-pricing and an ineffective public sector). Sudan, Ethiopia and Uganda also hope to increase their utilization of Nile waters.

-- The political and legal complications are numerous. Many Egyptian politicians are deeply hostile to the plan, while its legality has been questioned by Ethiopians and Sudanese. Such a project would be very difficult even if Gaza were part of an independent Palestinian state. Its chances under continued occupation are effectively zero.

4) purchase of excess water from the Litani River in Lebanon to Israel, the West Bank and to Jordan. This suggestion is not considered feasible at this time, given political considerations;

5) construction of a "Unity Dam" which would be used to derive water from the Yarmuk River; and

6) purchase of water from Turkey through a "Peace Pipe Line" or "Mini-Peace Pipeline" (a smaller-scale version of the former); the Sea of Galilee and/or the Unity Dam on the Yarmuk River would be used as reservoirs for Palestinian and Jordanian water. The start-up costs and complex multinational nature of this project render it unlikely, although it still has strong proponents.

It is the considered opinion of the authors of this report that, if Israeli subsidies for water for residents within the Green Line and for settlers in the Occupied Territories were eliminated, any existing subsidies for Palestinians eliminated, water conservation projects initiated immediately, and the economic base in Gaza shifted from agriculture to industry, it would likely not be necessary to import water from external sources until major population growth forces recourse to this approach. Desalinization is a possibility, but could wait until start-up costs decrease.

C. RECOMMENDATIONS

Table 1 summarizes conclusions with respect to water and sanitation sector development in the West Bank and Gaza Strip as well as related recommendations. The recommendations are intended as preliminary ideas for those involved in development planning for the Occupied Territories. They should be considered in light of the discussion on overall development opportunities in the Occupied Territories which is included in *Visions of a Sustainable Future*--Appendix II to this report.

TABLE 1
WATER AND SANITATION CONCLUSIONS AND RECOMMENDATIONS

Conclusions	Recommendations
1. While data with respect to water shortage in the West Bank are somewhat conflicting, available evidence points clearly to an increasing shortage of water given likely increased demand for water (currently artificially restrained) and current population growth rates. Evidence of water shortage for the Israel and the Occupied Territories, even given wastage resulting from pricing policies in countries in the region, supports this conclusion. The Gaza Strip suffers from an extreme water shortage at present, and the population growth rate points to an alarming shortage in the Gaza Strip in the near future.	1.1 Immediate support should be obtained for technical assistance, training, commodities and other support for the design and implementation of small-scale water and sanitation projects in the West Bank and Gaza Strip. Such projects should be designed to utilize the most appropriate technologies which encourage water-savings; e.g., rain-water catchment basins, conservation lagoons, and collecting pools for rainwater runoff. 1.2 Wastewater recycling, large-scale water-catchment and other projects should be designed and implemented in the Gaza Strip as soon as possible, in order to alleviate that area's severe water shortage. 1.3 Large scale water and sanitation projects throughout the West Bank and Gaza Strip should be developed in conjunction with funding agencies and in the context of the water policies of both Israel and Jordan. 1.4 Donors should ensure that, at a minimum, all of the agricultural projects they support in the Occupied Territories are developed and implemented with full attention to the problem of water shortage and water quality in the entire geographic area, and in particular in the Occupied Territories. This should influence, for example, support for crop development and production (e.g., discouraging citrus production in the Gaza Strip), pesticide use (which impacts on the water supply), drip irrigation, and education of farmers and others in the use of treated effluent for irrigation.

1.5 Donors should continue policy dialogue with the Israeli government concerning its water pricing policies and should encourage the GOI to make available data required for use in adequately planning water and sanitation projects in the Occupied Territories.

1.6 Regional cooperation projects in water and sanitation, involving the Occupied Territories (or its autonomous entity, if political change occurs), Jordan and Israel, should be encouraged and supported.

2. Sanitation conditions, including solid waste disposal and water quality, are deplorable throughout the West Bank and Gaza Strip, including urban and rural areas and refugee camps. These conditions have both immediate- and long-term health, economic and social consequences, but represent an area in which investments have potentially high impact.

2.1 Technical assistance, training, commodities and direct funding should be provided for small- and medium-scale sanitation projects. In the event of political change, larger scale projects such as joint public/private sector recycling plants should be undertaken.

2.2 Water quality studies in high-risk areas, analysis of the condition of groundwater wells, and repair of these wells are all urgently required. Such activities would likely necessitate technical assistance, training, commodities and direct funding support.

2.3 Municipal and private companies responsible for water and sanitation require technical assistance, training and other support focusing on management and on upgrading skills to use in existing and new technologies.

3. Palestinian municipalities and quasi-public water and sanitation entities have very limited capacity to adequately manage their operations. Private sector organizations involved in water and sanitation activities and issues are few and relatively small, but nonetheless represent an important resource for both present and future developments in this area. Some donors are providing both general and specific assistance to upgrade the capacity of "public" (i.e., municipal) and private sector organizations to improve their effectiveness and efficiency at present and to serve as a foundation for improvements in the event of political change.

3.1 Donors should provide technical assistance and training to municipalities and quasi-public agencies which are responsible for water and sanitation in the Occupied Territories. This assistance should focus on improving the planning, management and evaluation of their operations and of specific projects and should help to improve capacity for maintaining cost and pricing data.

3.2 Donors should provide technical assistance, training, commodities and direct funding to private sector organizations to improve their capacity to conduct broadbased assessments of water and sanitation issues, including in particular cost and pricing and utilization studies. This could include direct support for the conduct of such studies by the Palestinian private sector.

3.3 Donors should provide technical assistance, training, commodities (e.g., laboratory equipment) and other direct funding to upgrade the capacity of Palestinian institutions (e.g., universities and private laboratories and research institutes) to conduct studies of water quality and other environmental issues.

3.4 Donors should provide technical assistance, training, commodities (e.g., microcomputers, related software, and technical documents) to enable the development of information systems and clearinghouses which will help ensure that Palestinians have and use adequate data on which to base regional, local and project-level water and sanitation plans.

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APPENDIX I

CONTEXT OF DEVELOPMENT IN THE OCCUPIED TERRITORIES

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CONTEXT OF DEVELOPMENT IN THE OCCUPIED TERRITORIES

This appendix describes the overall context in which development opportunities exist in the Occupied Territories, including land size and population data, governance, recent economic trends and the role of donors in development activities. As necessary, these factors are discussed in more detail in each of the reports included in the full set of sector analyses for the Occupied Territories. For example, population data are discussed more fully in the companion report on Health, and economic trends are described in the separate reports on Finance and Credit and on Trade.

Several parameters of this report should be clarified. The term "Occupied Territories" is used to describe the geographic area of the West Bank and Gaza Strip as it is the accepted term for the U.S. government and U.N. agencies. It refers only to the West Bank and Gaza Strip, not to the Golan Heights or the Israeli security zone in Lebanon. The term Judea and Samaria is used when quoting Israeli statistics or other references, as this is the designation used by the GOI for the West Bank area. Unless otherwise stated, the West Bank statistics, information and recommendations presented in this report include East Jerusalem. Where necessary, East Jerusalem is referenced separately, for example in cases where data have clearly excluded East Jerusalem. It must be noted at the outset that the statistical data available from the GOI (i.e., those published in the Statistical Abstracts and other governmental sources) which can be used to numerically describe the sectors do not include East Jerusalem. This significantly skews the data and inhibits analysis of trend data which could be used for economic planning. Moreover, as Benvenisti has suggested,

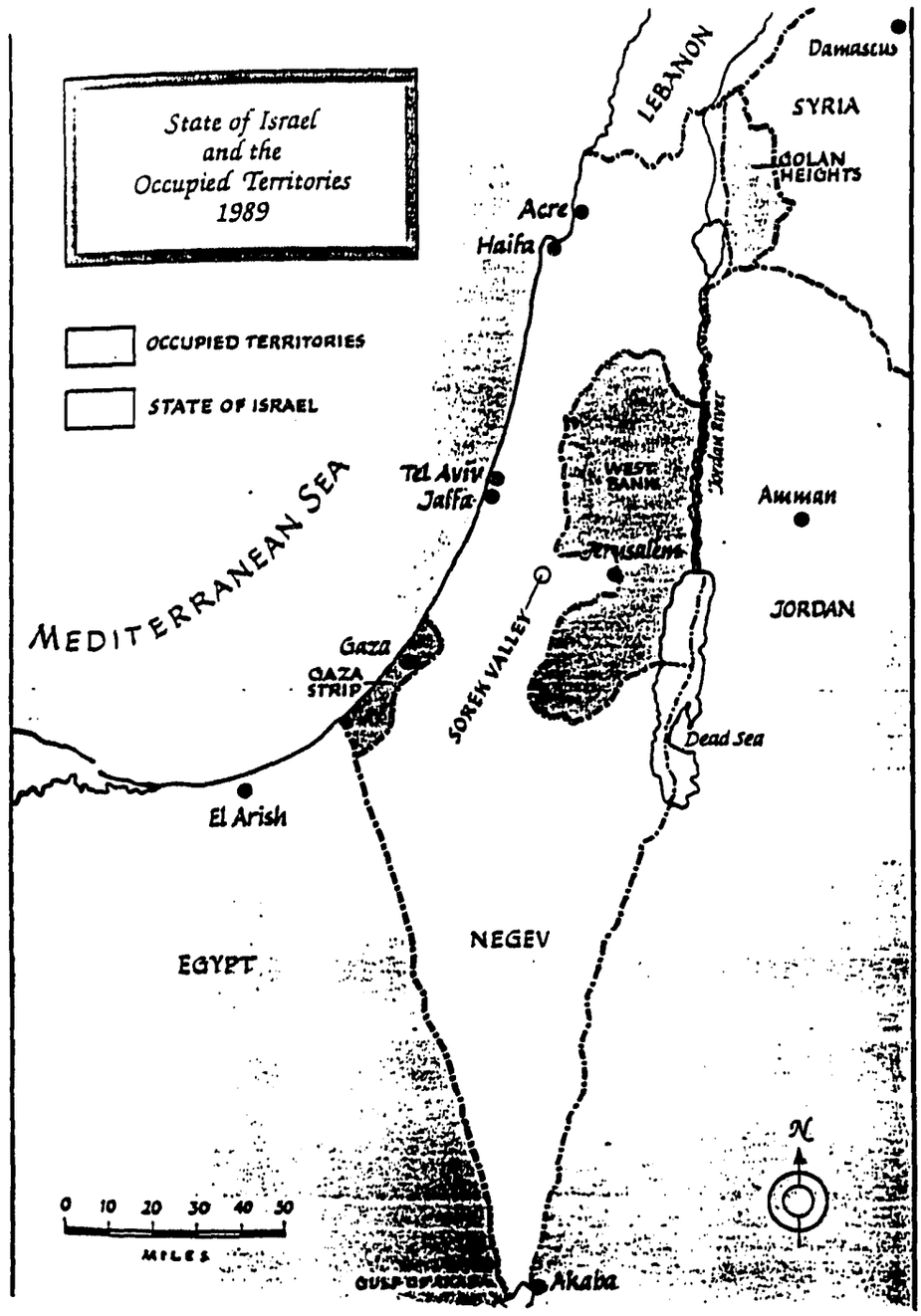
> "For statistical purposes the West Bank and Gaza Strip are considered by Israel's Central Bureau of Statistics to be units independent of Israel. Economic activity there is investigated and reported as though it constitutes a 'national economy' united with Israel in a 'common market.' The official reporting of GDP, GNP, exports and imports and balance of payments of the territories is, however, inaccurate at best and misleading at worst. The daily, complex, economic interaction over the nonexistent 'green line', lacking any effective monitoring and control, calls the reliability of the statistics into question."[1]

Unfortunately, because of the serious impediments faced by Palestinians and others in conducting empirical studies in the West Bank and Gaza Strip, most studies of the Occupied Territories depend primarily--and necessarily--on GOI statistics, notwithstanding their limitations.

Finally, although Israeli settlements in the Occupied Territories have considerable impact on economic and social development in the area, only minimal data and information are available with respect to either plans for settlements or specific factors pertaining to individual sectors (e.g., infrastructure and industry).

A. THE LAND AND THE PEOPLE

The West Bank and Gaza Strip are bordered by Israel, Jordan and Egypt as shown in Figure 1. The total land area of the Israeli-occupied West Bank and Gaza Strip (as defined by pre-1967 borders) is 5,939,000 million dunums (one dunum = .23 acres) of which 5,572,000 are in the West Bank and 367,000 are in the Gaza Strip.[2]



Source: M. Kunstel and J. Albright, Their Promised Land. Crown Publishers, Inc., New York; 1990.

According to the U.N., as of 1985, approximately 52% of this land was under Israeli control--that is, within the jurisdiction of the GOI or of Israeli citizens (settlers). Estimates of Israeli control of land as of early 1992 are shown below:[3]

Source of Estimate	West Bank	Gaza Strip
Al Haq	65%	50%
Land and Water	67%	50%
PHRIC	70%	52%

Because the most recent census was conducted twenty-five years ago (in 1967),[4] accurate demographic data for the Occupied Territories are virtually impossible to obtain. Thus, all population data have been estimated for the period after the 1967 census. The three primary sources of information regarding population are the Central Bureau of Statistics (CBS), the Ministry of the Interior (MOI) and estimates prepared by the Jordanian Medical Association in 1986. In the summary of demographic and other data published by Benvenisti and Khayat in 1988, it was noted that the Palestinian population data presented by the CBS and by the MOI for the Occupied Territories differ. For example, the data for 1987 showed CBS estimates of a total Palestinian population of 858,000 for the West Bank, while the MOI estimated the population to be 1,252,000.[5] The CBS estimates exclude East Jerusalem, which has a Palestinian population generally considered to be approximately 150,000.

Using the Statistical Abstract of Israel for 1990 as a basis, and assuming a 3.5% annual growth rate in the West Bank and a 4.5% annual growth rate in Gaza, the following estimates were calculated for 1991:[6]

West Bank (including East Jerusalem)	1,104,799
Gaza Strip	1,010,640
Total:	2,115,439

More than 35% of the Palestinian population is rural (see Figures 2-4), with 15% living in villages with populations of 2,500 or less. The Palestinian population is also a youthful one; nearly half (47.4%) of the Palestinian population in the West Bank is under the age of 15, as is 49.5% of the population of the Gaza Strip.[7] This age distribution and the high birth rates have important implications for social service needs as well as for labor force concerns.

Figure 2

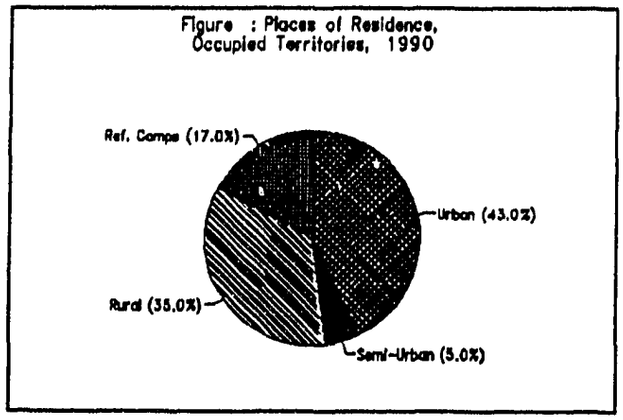


Figure 3

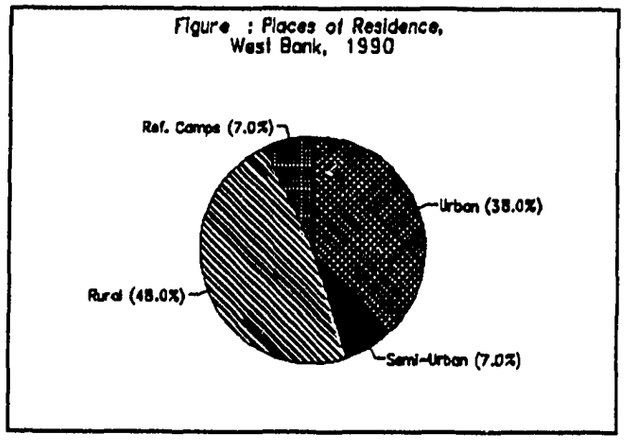
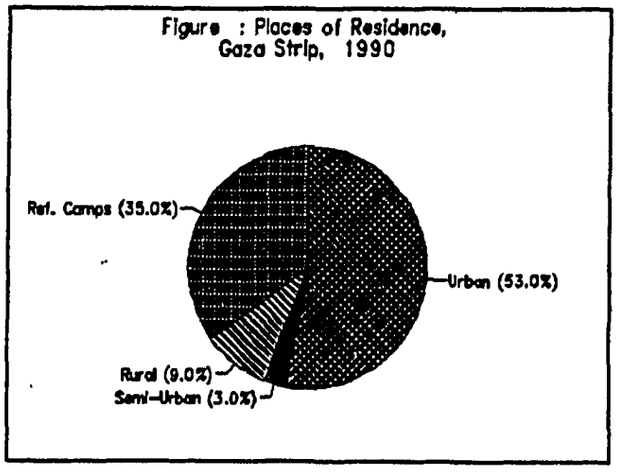


Figure 4



Source: Calculated from Statistical Abstract of Israel 1990. Central Bureau of Statistics: Jerusalem; 1990.

As of January, 1992, 451,695 individuals (or approximately 40% of the population) in the West Bank were registered as refugees. Of these, 119,172 (26%) lived in UNRWA camps. In the Gaza Strip, 549,675 Palestinians were registered refugees (approximately 80% of the population); of these, 302,977 (55%) lived in UNRWA camps.[8]

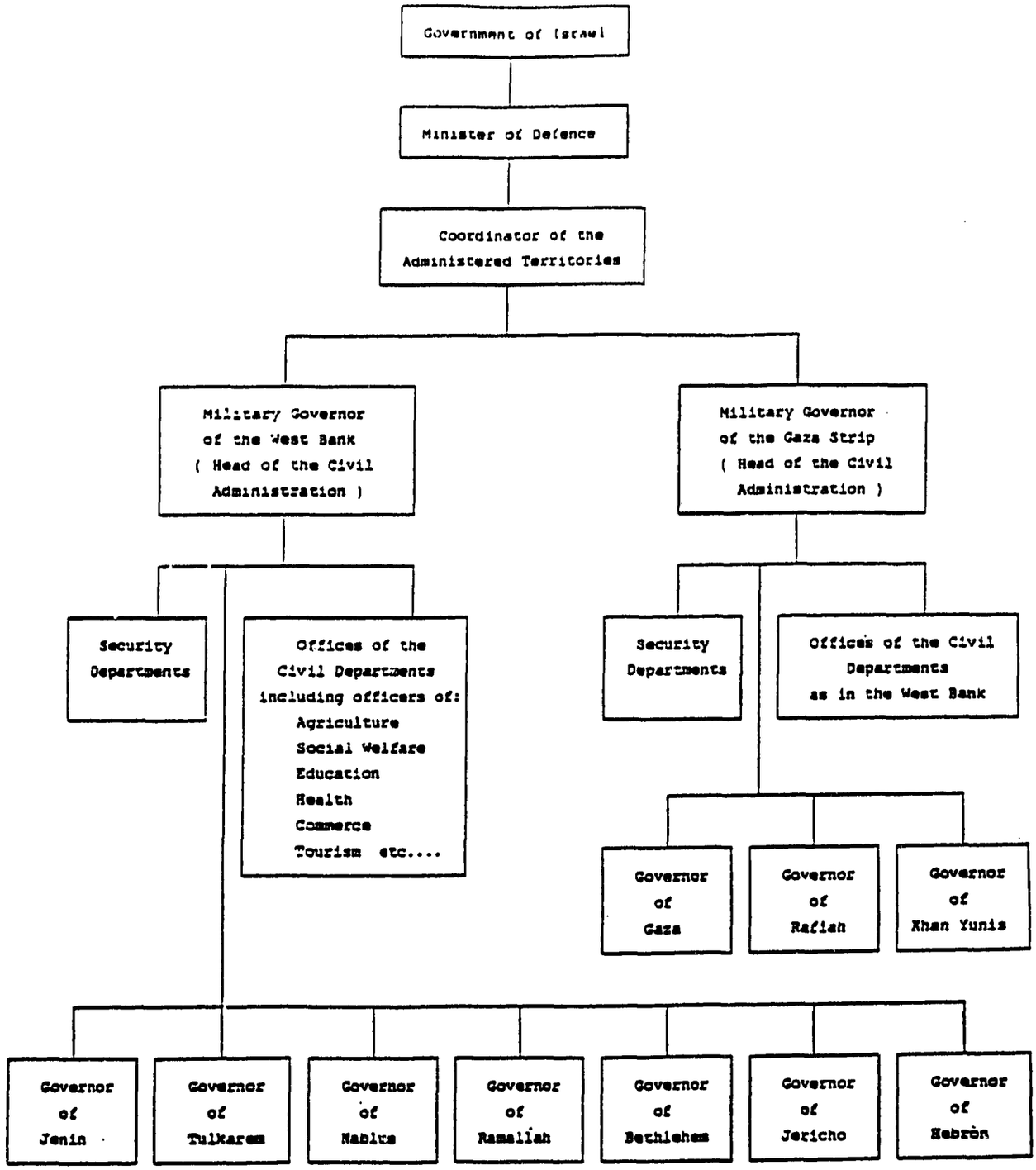
In spite of the high natural rate of increase, until 1991 the population had a relatively low rate of population growth. This resulted from emigration to Jordan, the Gulf States and outside the region, primarily for job opportunities. Even prior to the Gulf War and the influx of Palestinians from the Gulf States, an important population variable in the Occupied Territories, and particularly in Gaza, was the number of residents who returned from the Gulf States annually for summer vacation. It is reported that approximately 100,000 were doing so in the Gaza area for 2-3 months each year; no estimates of similar temporary residents were available for the West Bank. Since the Gulf War, an estimated 25,000 to 35,000 Palestinians have returned to the Occupied Territories from the Gulf States; an estimated 40% of them are currently residing in the Gaza Strip.[9] Most are university graduates but are unemployed or underemployed. However, those who are unemployed reportedly are not eligible for social benefits from the GOI. Some are eligible for services through UNRWA.

B. GOVERNANCE IN THE OCCUPIED TERRITORIES

From 1950 to 1967, the West Bank was under the authority of the Jordanian government, which in 1955 devolved public administration authority to elected municipal governments. From 1948 to 1967, Gaza was under Egyptian control, with appointed municipal governments. Subsequent to the 1967 War, the Israeli military authorities assumed control of the Palestinian population in the occupied West Bank and Gaza Strip. Since 1967, no local elections have been held in Gaza; no municipal elections have been held in the West Bank since 1977.

In 1981, the Israeli government initiated a system of civil administration (CIVAD). Figure 5 on the following page shows the organizational structure of the CIVAD. The CIVAD's "jurisdiction includes all the civil powers of the military government but not the authority to enact primary legislation, which has remained in the hands of the Military Commander."[10] In virtually all CIVAD offices, a military officer directs the departments, but Palestinians comprise most of the technical and administrative staff. According to the Fourth Geneva Convention, the GOI is responsible for the provision of public services for the Occupied Territories, based on tax and other remittances from the Palestinians residing in the West Bank and Gaza Strip and from the GOI budget. These governmental functions are carried out by the CIVAD, with specific responsibility for sectoral programs being coordinated with the relevant Israeli ministry or regulatory body.

FIGURE 5: ORGANIZATIONAL STRUCTURE OF THE CIVIL ADMINISTRATION (CIVAD)



Source: "Food Security in the West Bank and Gaza Strip," Oct 1985, p.4. Arab Scientific Institute for Research and Transfer of Technology (ASIR); El-Bireh, West Bank.

The CIVAD currently serves as the "authority" in most municipalities in both the West Bank and Gaza Strip--no municipal elections have been held since a military order suspended elections in December, 1977.[11] Some municipalities have Palestinian officials appointed by the CIVAD, but their authority is limited. Local municipalities carry out activities which in other circumstances would be either public or private sector responsibilities. These range from wholesale produce markets to operating slaughterhouses. In doing so, they liaise with both the CIVAD and Palestinian private sector organizations as appropriate and necessary. For all intents and purposes, both CIVAD and the municipalities therefore constitute "public" agencies in the Occupied Territories. Village councils, of which there are approximately 75 in the West Bank and eight in the Gaza Strip, have even less authority than municipal councils. As with the municipalities, no elections have been held for village councils since December, 1977.[12]

Chambers of Commerce also perform services which in other contexts would be within the purview of governmental or quasi-governmental bodies. For example, they are involved in expediting approval of exports to Jordan (see the companion Trade report for further discussion of their role in export). Elections for Chambers of Commerce were not held from December, 1977 until early 1992, when the GOI allowed such elections in six areas in the Occupied Territories.[13]

C. RECENT TRENDS IN THE ECONOMY OF THE OCCUPIED TERRITORIES

According to some reports, the economies of the Occupied Territories began to decline in the early 1980s. This decline resulted from stagnation in the Israeli and Jordanian economies.[14] The economy further declined in the late 1980s, even prior to the Gulf War. UNCTAD reported in 1991 that their review of Israeli and Palestinian data indicated "a rapid deterioration in the performance of the economy of the Occupied Territories during 1988-1990."[15] According to that report, the gross domestic product (GDP) for the Occupied Territories decreased by 12%/annum during that period, to just over $1.2 billion in 1990. Consistent with previous patterns, the decline in the Gaza Strip was more severe than in the West Bank: 17% versus 11%, respectively.[16] Gross national product (GNP) decreased by a comparable amount annually (11%), to approximately $1.8 billion. Per capita GNP was estimated to be $1,400 in the West Bank and $780 in Gaza in 1990.[17] By comparison, the GNP in Jordan for 1989 was $1,730.[18] In Israel it was $10,920 in 1990.[19]

With the exception of agriculture, all sectors exhibited significant decline in the period 1988-1990; for example, according to the 1991 UNCTAD report, industrial output decreased by an annual average of 14%, and construction decreased by an annual average of 23%. Other sectors combined (public and personal services, trade, transport and communications) declined by 17%.[20] As a consequence, the contribution of the agricultural sector to the GDP increased from 25% to 31% from 1988-1990, while construction decreased from 17% to 14%; industry has remained at 9% of GDP (although output had decreased). The UNCTAD reports that the decline in the industrial sector "bodes ill for the future of the Palestinian economy."[21] It should be pointed out, however, that several researchers have suggested that traditional economic indicators (e.g., GNP, per capita GNP, GDP)

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are not appropriate for the Occupied Territories as they have been devised to study productive economies. Given that the West Bank and Gaza Strip depend largely on transferred resources, the limitations of these indicators should be considered.[22]

The New Israeli Shekel (NIS) is the currency used predominantly in Occupied Territories, although the Jordanian dinar (JD) is still used by some in the West Bank. As of January, 1992, the rate of exchange was NIS 2.3/US $1 for the Shekel and JD 1/US $0.68 for the Jordanian dinar. Given the inextricable ties between the economies of the West Bank and Gaza and those of Israel and Jordan, pricing and inflation in these two countries have a significant and deleterious impact on the Occupied Territories. Several key examples of recent impacts are:

* increased prices for goods imported through Israel, which accounted for 91% of goods imported into the West Bank and 92% of goods imported into the Gaza Strip in 1986, the most recent year for which data are available;[23]

* decline in the wages of Palestinians working in Israel and a decline in real disposable income of most income groups in the Occupied Territories (an example of the deleterious impact of Palestinian wages' being tied to the Israeli economy); and

* the differential in the consumer price indices of the Occupied Territories and Israel, which has lead to both 1) a decrease in value of sales of Palestinian goods to Israeli buyers, and 2) an increase in purchase by Palestinians of consumer and durable goods from Israel (until the economic boycott of the Intifada, when this practice decreased considerably).

The economic impact of the Gulf Crisis on the Occupied Territories was--and continues to be--significant in all sectors. As the 1991 UNCTAD report noted, the economic impact resulted from both external and internal pressures; these are summarized below:[24]

* reduction in private remittances from Palestinians working in the Gulf states, estimated at $120 million to $340 million annually prior to the Gulf War;

* involuntary return of Palestinians working in the Gulf states to the Occupied Territories resulting in increased pressure on an already distressed job market;

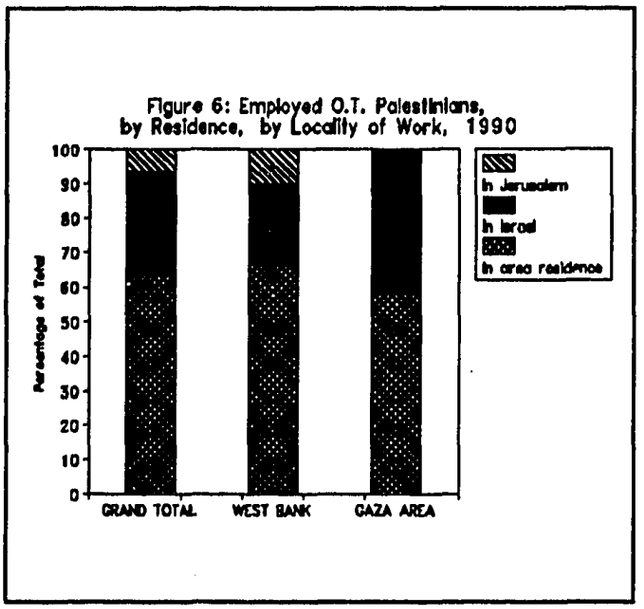
* decreases in both public and private financial support from the region for Palestinian private sector development in both social services and productive enterprises (this support was estimated to be $150 million in 1989); and

* disruptions in traditional export and import markets (note: the market share in Jordan had begun to decline prior to 1991[25]).

The total estimated economic impact of the Gulf War (based primarily on lost remittances, transfers and exports) was between $250 and $750 million in 1990 alone (55% to 80% of the total generated by these three sources in 1989), or approximately 10% of gross national disposal income.[26] Few knowledgeable individuals believe that there have been substantial moves toward an improvement in the economy of the Occupied Territories since the end of the Gulf War.

Estimates of current unemployment rates vary considerably. Israeli statistics for 1990 show a 13%-15% unemployment rate (including both those officially registered at the CIVAD labor exchanges and those defined by the Central Bureau of Statistics as "employed persons, temporarily absent from work"). Other estimates of unemployment in both the West Bank and Gaza Strip range between 30% and 40% of the work force.[27] While Palestinians now have regained minimal access to the Gulf States as a source of employment (and remittances), they are still dependent on employment in Israel (see Figure 6 below), although this alternative for export of labor capital is also highly volatile. As a result of reduced personal income, there has been a concomitant reduction in consumer demand (estimated 20-30% reduction)[28] and reduced funding available for investment.

Figure 6



Source: Israeli Statistical Abstract, 1991. Central Bureau of Statistics: Jerusalem; 1991.

Reductions in local funding available for investment are particularly critical for economic development in the Occupied Territories because between 70% and 95% of capital investment in industry in the Occupied Territories is provided by the individual owners or their families. Importantly for economic development, the period 1988-1990 saw a 4% annual decrease in private investment.[29] Moreover, the external trade sector has not yet shown signs of improvement since the end of the Gulf War, in spite of efforts to re-establish economic relations with traditional trading partners in the region. Exports of both goods and services decreased an average of 30% per annum during 1988-1990, with the decrease far more dramatic in the Gaza Strip (50%) than in the West Bank (16%).[30] Imports of goods and services also declined during this period: 16% in the West Bank and 19% in the Gaza Strip.[31] As of the beginning of 1992, markets outside of Israel remained largely closed to Palestinian products, and the decreased purchasing power of Palestinian consumers continues to result in decreased imports available for Palestinians and decreased internal markets for Palestinian products as well.

D. DONOR ASSISTANCE

In addition to remittances from Palestinians working abroad, the economies of the West Bank and Gaza Strip depend to a large extent on donor countries and organizations, each of which has its own particular interest in the Occupied Territories and therefore directs the aid in a particular way. In 1991 alone, $69 million in funding was allocated by donors for projects in the Occupied Territories.[32] This figure does not include funds provided by Arab states, as these data are difficult to obtain. A large proportion of donor funds are allocated through international private voluntary organizations (PVOs). Therefore, while the amount of donors funds allocated to the Occupied Territories appears large in proportion to the GNP (in 1991, the UNRWA budget alone accounted for 6% of GNP), a relatively large percentage of the funds do not directly enter the economy of the Occupied Territories. Much of the bilateral and multilateral funding remains in the country of origin to purchase goods and supplies which are donated to beneficiary groups in the Occupied Territories, or to pay for training and technical assistance. Similarly, while the "overhead" rate of the international agencies (e.g., UNRWA) and the international PVOs is relatively low (usually representing 20% - 45% of the total project budget), this does represent funds which are not part of the economy of the Occupied Territories. It should be emphasized that, in this respect, the West Bank and Gaza Strip do not differ from most other recipients of donor funds. However, in view of the fact that such funding is crucial for operation of basic human services and support of infrastructure in the Occupied Territories, it becomes a more critical issue. Moreover, there is little flexibility in the allocation of funds within the Occupied Territories: donor funding and other types of development assistance by international and bilateral agencies such as the World Health Organization (WHO), the UNDP and A.I.D., must be carried out by the donors and agencies with the approval of the GOI.

The importance of the economic role of UNRWA cannot be overlooked. In 1990, its annual budget for the West Bank and Gaza Strip was $98.6 million. In 1991, the UNRWA budget was $98.3 million; the approved 1992/1993 budget is $217.8 million (roughly $109 million per year).[33] In addition, from 1988 to 1991, approximately $949.9 million has been contributed to UNRWA, primarily by the

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U.S. and European governments, to operate refugee camps and to provide services to the refugees under its aegis. Approximately 40% of these funds are utilized for the West Bank and Gaza Strip.[34] Until recently, UNRWA has expended only minimal funds for economic development projects. However, the agency plans to raise $20 million over the next five years for income-generating projects in the Near East.

It is important to distinguish between the ultimate source of external funds (e.g., governments and private donors to non-profit organizations) and the vehicles through which such funds are disbursed. The most important sources of external aid have been:

* individual Palestinians in the diaspora, who contribute to a variety of organizations and institutions (as distinct from the remittances sent by individuals to their families in the Occupied Territories);

* Arab governments and individual Arabs, contributing to:

  - individual Palestinian organizations and institutions, including municipalities;

  - the Joint Jordanian-Palestinian Committee for the Steadfastness of the Palestinian People in the Occupied Homeland;

  - the Palestinian Liberation Organization (PLO); and

  - various U.N. agencies operating in the Territories, including the UNRWA and UNDP.

* the U.S. Government, which disburses funds through:

  - various U.N. agencies operating in the Territories, including the UNRWA and UNDP;

  - the Agency for International Development (A.I.D.) Jordanian Development Program (until 1989); and

  - U.S. private voluntary organizations (PVOs) operating in the West Bank and Gaza Strip and one Palestinian PVO.

* private U.S. individual donors and foundations, providing funds to:

  - individual Palestinian organizations and institutions; and

  - U.S. private voluntary organizations operating in the West Bank and Gaza Strip.

* European, Canadian, Japanese and other governments, which provide contributions to:

  -- individual Palestinian organizations and institutions;

  -- the European Community (EC); and

  -- various U.N. agencies operating in the Occupied Territories, including the UNRWA and UNDP.

* European individual donors and foundations, which provide contributions primarily to individual Palestinian organizations and institutions.

Understanding the nature of the sources of external funds is important to an understanding of the dependency of the Palestinian economy on the vagaries of external conditions. Ultimately, the U.S. and European governments and Arab states (and, increasingly Japan) are the major sources of funding. The major funding vehicles, including the several U.N. agencies and the U.S. PVOs, derive their funds from the same sources, governments and a few foundations and individuals.

For the most part, external funds have been provided for:

* construction of health and social service infrastructure projects and some housing,

* operating costs for health and social service programs (and lately for rehabilitation services, more popular during the height of the Intifada),

* agricultural cooperatives,

* municipalities (for construction and operating costs),

* human resources development and training, including local and overseas long-term and short-term education, and

* infrastructure and public works.

With the exception of agriculture, minimal donor funds have been provided for the productive private sector.

It is hoped that this sector analyses, and the others which comprise the cross-sectoral assessment of development opportunities in the Occupied Territories, will contribute to the efforts of Palestinians to be more proactively involved in planning for and implementing donor-funded projects. The reports may also contribute to donors' plans for more appropriate--as well as more effective and efficient--use of the resources they allocate for the Occupied Territories.

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APPENDIX II

VISIONS OF A SUSTAINABLE FUTURE

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APPENDIX II: VISIONS OF A SUSTAINABLE FUTURE

This appendix to the sectoral analysis presents a summary assessment of the overall potential for development opportunities in the Occupied Territories. The analysis was conducted within sectors, and, insofar as possible, across sectors. This assessment is based on the analyses and conclusions presented in each of the individual sector reports prepared by Policy Research Incorporated (PRI). The eight individual sector reports include agriculture, education, finance and credit, health, industry and enterprise, infrastructure, trade, and water and sanitation.

Appendix II includes 1) a discussion of alternative assumptions under which economic and social planning will likely occur in the Occupied Territories; 2) a summary of the factors which constrain development across the sectors; 3) a summary of recommendations within and across the sectors; and 4) a list of issues that warrant discussion in the process of considering development alternatives for the Occupied Territories. Brief summaries of the findings of each of the sector reports are included as Executive Summaries with those reports.

A. DEVELOPMENT IN THE CONTEXT OF ALTERNATIVE SCENARIOS

The move toward Palestinian economic self-reliance expanded considerably with the advent of the Intifada in 1987. Generally, the intent of this movement has been to promote a more productive allocation of investments, both internally (Palestinian) and externally (from donors). Specifically, Palestinians involved in development planning have sought to "enhance self-reliance in production, lessen dependence on external financial sources, diversify, rationalize and integrate domestic production branches, [and] reorient consumption patterns towards less conspicuous modes."[1] To this end, Palestinians have begun to 1) develop sectoral and regional plans; 2) design and implement experimental projects and new institutional forms and entrepreneurial initiatives; and 3) initiate a range of popular 'participatory development' efforts involving families, communities, regions, cooperatives, enterprises and professional associations.

In order to ensure that these sectoral analyses are as useful as possible for development planning, the recommendations summary recommendations presented in this appendix are listed assuming one of two alternative political scenarios:

1) no change in the current political status (with perhaps some relaxation of constraints), including programs and activities that could have short-, medium- and long-term impact without respect to a change in governance; and

2) a change in governance (e.g., interim self-government or autonomy).

There are, of course, many shades within this spectrum, but it is hoped that presenting the recommendations in this way will provide an option for discussion of development in the Occupied Territories. The development recommendations that assume the status quo are intended to meet immediate needs identified in the conclusions to which they are linked as well as to provide a foundation for

development under whatever political solutions are realized. They are thus building blocks toward a sustainable future under alternative political scenarios. It should be emphasized that the recommendations listed under "assuming political change" could also be carried out within a status quo scenario, but would likely necessitate elimination or significant amelioration of existing bureaucratic and other constraints.

Under the present circumstances, it is all too easy to assume that little can be accomplished other than minimal support for existing projects; this approach defeats the intention to promote sustainable development. On the other hand, to assume independence (statehood) as the only basis for planning economic and social development negates the reality of the present political situation (that is, of the Occupation) as well as the possibility of an interim self-government. It also does not take into account that, even in the event of autonomy, it will be necessary to design phased implementation of policies and programs. For example, it will be necessary to ensure that:

* a Palestinian tax system as well as an organized health system are in place before assumption of responsibility for financially burdensome public hospitals;

* economic support structures are in place prior to significant expansion of industrial capacity;

* cross-regional planning is in process, including the consideration of issues such as the trade-offs necessary between agricultural and industrial development in the water-poor Gaza Strip; and

* Palestinian planners and donors develop effective plans for physical infrastructure and other projects, ensuring that they will be used by their intended beneficiaries (i.e., Palestinians) given the possibility that such projects could be established within settlement areas in the future.

In any case, donors should accept the possibility that their medium-term and long-term (and even many short-term) development expectations could be considerably diminished under the present circumstances, even in the event of autonomy. In this most abnormal political situation, the traditional indicators of change--difficult to obtain, verify and attribute to donor programs under any circumstances--are of questionable validity and utility.

B. CONSTRAINTS TO DEVELOPMENT IN THE OCCUPIED TERRITORIES

Sustainable economic development is proving to be an elusive goal even under "normal" circumstances in developing countries, and increasingly so for countries of all income levels. As this and the companion sectoral analysis reports demonstrate, the socioeconomic situation in the Occupied Territories do not approximate normal circumstances. Given the status of the various sectors of Palestinian economy and society, and in particular given bureaucratic and other impediments, what are the opportunities for economic and social growth and

development in the West Bank and Gaza Strip? The technical and managerial issues are myriad and complex, both within and across sectors.

While this is true in any country or jurisdiction; however in the Occupied Territories these issues are complicated by the volatile and fluid political realities and by the significant dependence on external donors for support for any type of development. Donor investment and support are, in turn, complicated by the fact that the traditional role and involvement of donors in developing countries has been severely limited in the Occupied Territories. The normal mechanisms for rational allocation of donor assistance (e.g., donor negotiations with a ministerial level planning agency or external donors' department within a Ministry of Finance) do not exist, while constraints to planning effective use of donor funds are apparent.

It is important that those involved in planning for development in the Occupied Territories be aware of the constraints under which the various sectors operate and within which development occurs. The constraints which pertain to each of the sectors are described in the corresponding section of each sectoral analysis, with a discussion of the manner in which the constraints impact on development in that specific sector. However, several types of constraints have especially broad impacts on development; these are summarized below.

B.1 Bureaucratic constraints

Bureaucratic constraints include GOI regulations which discriminate against Palestinians and their public (municipal) and private sector institutions and organizations. These regulations are subject to change (sometimes without notice) and to enforcement by individual members of CIVAD without approval (or knowledge) of their superiors. Examples include:

- curfews (sometimes imposed for extended periods of time),
- barriers to physical mobility constituted by pass requirements and other factors,
- onerous procedures for obtaining building and other permits and arbitrary application of such procedures,
- taxation policies and enforcement which have been perceived by the International Jurists Commission and others as inappropriate and a violation of Geneva Conventions,
- restrictive labelling and export requirements on Palestinian products, and
- control of and restrictive policies with respect to basic physical infrastructure including electrification, communications and transportation, water use, and land use.

An important impediment to effective planning and implementation of development programs and projects is the fact that all those involved in development planning, including Palestinians and donors, lack access to critical fiscal, economic and technical information which is collected, processed and maintained by the CIVAD (or the GOI). While some information is available to Palestinians and others through the Central Bureau of Statistics (and other sources), other critical information is not. This includes, for example, revenue and expenditure information which is critical for an understanding of operating costs and cost recovery possibilities within the health and education sectors. Palestinians (and donors supporting projects in the Occupied Territories) also have no information with respect to plans for settlement areas, including plans for physical infrastructures to support the settlements.

The complex mixture of residual laws (in force at the time of the Occupation), Israeli civil laws and regulations and military regulations vastly complicate development planning and implementation of specific projects and general sectoral programs. Virtually all court cases involving Palestinians are adjudicated in the military courts, including all civil cases (e.g., with respect to contracts and taxes). The effective absence of a civil court system makes it all but impossible to formulate and enforce contractual arrangements.

Palestinians have no adequate mechanism to generate revenues and provide public services. As a result, Palestinian NGOs and municipalities operating health and social programs or public infrastructure systems (e.g., water and sanitation, road networks, electrification) face unusual obstacles in attempting to cover their operating costs and adequately maintain physical plants and equipment.

There have been some positive indicators that GOI constraints have relaxed since 1991. In late 1991 the GOI initiated relaxation of restrictive policies which impede economic development, including: approval of licenses for a number of new small- and medium- scale manufacturing, agricultural and commercial projects and relaxation of restrictions on the inflow of external financial resources by raising the limits on such inflow per person entering the Occupied Territories--from $400 to $3,000.[2]

It may well be that international organizations (e.g., the U.N.) and bilateral and other donors can convince the GOI that relaxation of other bureaucratic constraints is beneficial to the economies and social structures of both Israel and the Occupied Territories. Simultaneously and independently, the international organizations and donors should work with the Palestinians (and Arab states) to ensure that, insofar as possible, constraints that result from Palestinian practices and the policies of Arab states are ameliorated or eliminated. Finally, the U.S., and other countries should remove constraints imposed by their governments or apply policies which would encourage development (e.g., labelling and most favored nation status). These governments should also ensure that their investment policies and programs are consistent both internally--that is, within the bilateral program--and externally--that is, between and among the various donor agencies and organizations. Donor investment policies should also be consistent, insofar as possible, with available development plans generated within the Occupied Territories.

B.2 Economic and other constraints

Given the inextricable linkage with the Israeli economy, from which the Occupied Territories derive questionable benefit, there is, effectively, no free external market, and a severely limited free internal market. Moreover, the public (GOI) and private (Israeli and Palestinian) environment is not, to say the least, conducive to sustained economic development. The economic and physical infrastructures and systems on which development normally depends range from grossly inadequate to nonexistent. In addition, the Occupied Territories have few natural resources, a shortage of water and an increasingly diminishing land area.

The local work force, which in the past served as an important source of income (through export of labor to the Gulf States and other countries) is unbalanced with respect to education and training. That is, a large (though not specifically defined) proportion of Palestinians are highly educated but underemployed professionals or skilled and semi-skilled workers who have only minimal access to training that would enable them to become updated on technological advances.

Since the onset of the Gulf crisis, the "safety-valve" of Palestinian emigration to the Arab Gulf has been closed, and Palestinians have returned to the Occupied Territories or to Jordan. As a consequence, remittances from the Arab Gulf, on which the Palestinian economy was heavily dependent, have been significantly reduced. As a result of the extremely limited opportunity to engage in external trade and the virtual absence of support structures for economic and social development (e.g., marketing systems for agricultural and industrial trade), Palestinians have little competitive advantage, with the exception of their low-scale wages, which have some negative socioeconomic consequences as well.

Development and implementation of potentially effective national and regional level plans require a governmental base through which to link sectors and public/private sector initiatives and programs. It also requires data and information as well as experience in the selection and application of planning techniques. However, neither the CIVAD nor the municipalities (which together constitute the de facto public systems in the Occupied Territories) plan and implement programs and projects across sectors. Nor do most Palestinians working in these entities have substantial experience in such cross-sectoral planning and program and project management. Not only have they been minimally involved in the design, use and application of data and information systems, they have also had little access to data and information required for planning and managing public and private sector organizational structures and functions.

Physical infrastructure (communications, electrification, and transportation networks) and water and sanitation systems are in poor repair and wholly inadequate. This severely impedes operation and expansion of the public and social service sectors and the productive private sector. Moreover, political and economic factors impede the efficient linkage of critical physical infrastructure such as electrical, communications, and road networks.

Unfortunately, as discussed in the individual sector reports, the political situation in the Occupied Territories militates against investment in private sector economic activities which may have the greatest potential for economic impact, as well as in social or physical infrastructure projects which take into consideration economies of scale. With respect to the latter (which include, for example, telecommunications, electrification and health services), this limitation has fostered wasteful and costly duplication. It has also hindered the ability of Palestinian institutions and donors to provide adequate basic services for the population as a whole and for the industrial sector in particular. For example, Palestinians are prohibited (for security reasons) from using much of the extensive road network which serves settlers, although access to these roads would facilitate access to markets. Similarly, electrification projects (largely funded by donors) have focused on electrification of the smaller villages, rather than on ensuring that industries have access to services adequate to meet their production needs.

The present economic outlook. The worsening economic situation in the Occupied Territories bodes ill for development opportunities. Extensive development is difficult for projects that rely on private sector initiative, as well as those that rely on public (municipal) initiative. At the same time, the relatively young, disaffected (and unemployed) youth can potentially both participate in social unrest and contribute to social and economic change.

C. DEVELOPMENT OPPORTUNITIES

Even given these constraints, however, substantial improvement can and should be made in economic and social development in the Occupied Territories. It is critical that Palestinians and donor agencies rationalize the existing scattered projects within and across sectors. This rationalization must include identifying linkages across sectors that can improve the likelihood of development under both the status quo and potentially changed political and administrative circumstances.

Table 1 presents a summary of recommended programs by sector for both the status quo and political change scenarios. The recommendations for the political change option are <u>in addition to</u> those for the status quo, which are intended as building blocks for development, whether or not positive political change is achieved. The recommendations were devised based on the needs identified in each of the sectors independently. It should be noted that because detailed recommendations are included in each sector analysis report (e.g., education, health, industry), the recommendations in Table 1 are abbreviated in order to present them in a tabular format. Also, the term "public" or "quasi-public", as used in Tables 1 and 2 and in the following discussion, refers to municipalities and to other entities that undertake activities that under normal circumstances would fall within the purview of public (or quasi-public) entities (e.g., local water authorities). The recommendations are <u>not</u> presented in priority order.

An assumption supporting all recommendations is that donors would utilize local (Palestinian) resources wherever possible, as well as appropriate and cost-effective resources from the region (including Israel and Jordan, for example) and from donor countries (e.g., the U.S., Japan and Europe). Donors are encouraged to include a wide range of community-based and other organizations in order to

provide them with the opportunity to participate in comprehensive development across sectors and to promote broad-based support for such development among these groups.

To prepare for specific plans within and across sectors, to derive maximum benefits from available resources, in the Occupied Territories, and to promote sustainable development, Palestinians and donors involved in supporting development in the Occupied Territories should: 1) identify overall development goals and specific objectives, 2) assess the relative utility of alternative development approaches, 3) consider the cross-impacts of the development goals and specific programmatic foci and projects within and across sectors, and 4) set priorities for projects within and across sectors. Whenever possible and appropriate, donors should assist Palestinian organizations in this planning process.

To provide an example of how the interrelationships among project proposals and objectives can be considered, Table 2 presents each specific sector recommendation identified in Table 1 and indicates the specific objectives for development to which the project or activity would contribute. These general and generic development objectives were identified from two sources: the most recent World Bank reports.[3]

A review of the recommendations presented in Table 2 makes it clear that there is a consistent pattern across the sectors and across the objectives. Review of this pattern might be useful for those involved in considering a rationalized development approach for the Occupied Territories. The principal foci of recommendations across sectors are:

* strengthen the capacity of Palestinian quasi-public and private sector institutions and organizations to plan, manage and evaluate policies, programs and projects at the national, regional and local level through:

  - selecting and improving access to and use of information resources both internally (within the Occupied Territories) and externally;

  - providing technical assistance, training (for managerial and technical staff) and other support for the enhancement or development of quasi-public and private sector institutions and organizations that are responsible for or are involved in economic and social infrastructure support systems (e.g., water and sanitation, quality control, marketing systems, civil courts, tax collection and social welfare. This would include, for example, assisting in the definition and adaptation of standardized procedures; and

  - improving education and training at the primary through university levels, including vocational/technical training, and literacy, self-instruction and distance (remote) learning programs.

* improve the development, diffusion, use and assessment of technology in the quasi-public and private service and productive sectors through:

  - providing technical assistance and training to enhance the selection and use of equipment and of new procedures (technologies) in agriculture, industry, health and education and physical infrastructure, including assessment of the economic, social and environmental impacts of new technologies and procedures;

  - providing grants and loans (as appropriate) for the purchase of equipment which has been demonstrated to be useful and appropriate for enhancing productivity or effectiveness in the sector to which it applies (e.g., new technologies in crop production, cardiovascular disease prevention and treatment or alternative energy sources); and

  - providing grants and loans (as appropriate) to enhance the capacity of Palestinian universities and research institutions to develop and/or adapt appropriate technologies for use in the West Bank and Gaza Strip and for export (including, for example, computer software).

* improve management of, access to and use of credit and financial resources, through:

  - training of existing personnel in banks and credit institutions;

  - technical assistance and other support to improve management of bank and credit institutions;

  - facilitating loans through international and regional development banks and private sector financial institutions; and

  - supporting the development of credit circles and other locally based organizations which foster savings and loan arrangements for local development.

* improve the collection, analysis and distribution of data and information for use in quasi-public and private sector programs and projects, through:

  - training in data and information management;

  - technical assistance and other support for the development of clearinghouses and information systems in each primary economic and social sector (e.g., agriculture, industry, water and sanitation); and

- encouraging the provision of relevant data sets from the GOI to Palestinian public and private institutions.

* improving the physical infrastructure which supports both quasi-public and private sector services and productive enterprises, including, for example, communications, electrification and transportation networks;

* strengthen health and social welfare services which are critical for human growth, development, welfare and performance and are linked to a society's economic development; and

* encourage effective and efficient use of energy resources and prospective protection of the environment in the process of economic, and particularly industrial expansion.

D. DEVELOPMENT ISSUES IN THE OCCUPIED TERRITORIES

A number of complex issues must be faced by those involved in development planning for the Occupied Territories. This section of the appendix briefly summarizes several of those issues.

Linkages Across Sectors. While it is true that devising plans for economic and social development in the Occupied Territories is difficult under the present circumstances, the opportunity nonetheless exists for the design and enhancement of public and private sector systems which avoid the problems of entrenched bureaucracies and make the most effective use of Palestinian entrepreneurship and community and support networks. All too often it is necessary to prepare development plans in the context of bureaucratic structures which are not disposed to interact with one another (e.g., the Ministry of Health with the Ministry of Agriculture) or with the private sector (e.g., industry with public environmental agencies). In the virtual absence of such bureaucratic structures at the regional (i.e., West Bank or Gaza Strip) level, the potential exists to plan for the most effective and appropriate use of limited resources for Palestinian development. Moreover, donors and Palestinians have a unique opportunity to establish incremental programs and projects on which broader or more extensive development can be based both within and across sectors. For example:

- educational and training programs can be devised in light of short-, medium-, and long-term economic development plans in general and industrial expansion and agricultural trade specifically;

- innovative approaches to expansion of health services and to health promotion and disease prevention can be devised in recognition of and in cooperation with the productive private sector (e.g., workplace-based PHC and prevention activities); and

- support for industrial expansion and infrastructure development can be linked to appropriate and efficient use of natural resources and designed to promote protection of the environment.

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Benefiting from Israeli Experience. The factors of development in the Occupied Territories place them at a significant disadvantage with their primary trading partners--Israel and Jordan--and this has been seen primarily as negative with regard to development. However, opportunities exist for the Occupied Territories to learn from the experience of their most successful trading partner, Israel, as well as to learn from their specific economic interaction with that country. For example, educational and training opportunities in the Occupied Territories stand in stark contrast to those available in Israel. As the Israeli economist Aharoni has noted, human resource development in Israel has been a foundation of economic development. He states that "The long-term competitive advantage of Israeli firms is largely a function of their ability to exploit unique human capital capabilities."[14] Israeli investment in the educating and training its population is exemplary. Palestinians and donor organizations which support development in the Occupied Territories should consider adaptation of applicable Israeli educational and training policies and programs to their development plans.

Addressing development policy questions. The current situation in the Occupied Territories also provides the opportunity for consideration of broad-based policy issues which entrenched bureaucracies often avoid facing. The policy questions that should be considered by Palestinians, donors and other involved in planning for development in the Occupied Territories include, for example:

1. Given that there no mechanism exists to ensure coordinated planning across sectors, what are the opportunities to ensure (insofar as possible) intra- and inter-sectoral linkages and decision-making for sustainable development? Such linkages include, for example, investment in productive industries which are not environmentally hazardous and in crop and livestock production which places minimum burden on land and water resources. A related consideration is that given the importance of integrated planning and the inherent difficulties in achieving it under the current circumstances, what should be the priority projects for the immediate (1-3 years), medium (3-5 years) and long-term (5-8 years)?

2. What will/should be the relative priority of public social and economic infrastructure systems (e.g., unemployment insurance, welfare, public health, social security/pensions as well as quality control and testing of medicines, protection of the environment, etc.) vis-a-vis investments in the productive private sector (e.g., tax benefits for private investment, public support for physical infrastructure for industrial zones)?

3. What contributions should donor agencies (bilateral, multilateral and private) make to improve the capacity of public services (e.g., health, education, physical infrastructure), pending a political resolution? Should such contribution include, for example, training the existing or an emerging cadre of municipally-based physical infrastructure employees (communications, electrification, transportation and water and sanitation) and/or investment in physical infrastructure projects themselves? What should be the relative priorities of investment in education and investment in improvements in technologies in the public and private sectors? While human resources development (education and training) is necessary (and a traditional investment role by itself), it is simply insufficient and could

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lead to problems of social and/or economic instability if the economy does not soon rebound. Moreover, focusing exclusively on human resource development (in particular on degree training) has the disadvantage of requiring a long lead time before impact on economic development is realized.

4. What is the most appropriate and feasible degree of centralization/decentralization of public and quasi-public services, given cultural/geographical realities and practical economic and administrative considerations? What role could/should donors play in planning and preparing for centralization or decentralization of such services?

5. What is the most appropriate role for donors with respect to investment in the productive private sector? Given that the mechanisms used in both market and mixed economies to encourage investment and jobs creation are minimal (at best) in the Occupied Territories, what should donors do to assist in "jump starting" the economy in the Occupied Territories? What investments should be made in the cooperatives, which have (for all intents and purposes) assumed the role of quasi-shareholding for-profit companies, competing with privately held companies? Donors have supported the cooperatives extensively but have provided little support to the private sector. Should donors now provide financial support to privately-held, productive private sector companies comparable to such support provided to private companies in the U.S., Europe and the Pacific Rim (e.g., the U.S. government's Small Business Innovation Program)? Should donors work with the international banking community to facilitate loan guarantees to the private sector in the Occupied Territories for industrial development? To what degree should donors encourage or discourage small-scale enterprise in lieu of investments in medium- and large-scale industrial enterprises?

6. What should be the role of donors in preparing for assumption of certain public services (e.g., health, education, tax, regulatory and court systems)? On the one hand, there is considerable pressure for the Palestinians to assume responsibility for the social systems (e.g., health and education) in spite of the fact that they are not now responsible for the governmental systems with which those social service systems are inextricably linked (e.g., tax and regulatory systems). On the other hand, creating the basic (non-physical) infrastructure required for assumption of these responsibilities could consume a large proportion of the current donor allocation for the Occupied Territories.

7. Given that current policies of many donors, including the European Community and A.I.D. (as well as the World Bank, which has had representatives at the multilateral economic discussions), encourage privatization of services which are currently owned or managed by the public sector in some countries (e.g., electrification, transportation, communications, health), what investment should be made in municipal control of such services in the Occupied Territories? What rationale is there for such investment versus investment in encouraging private sector ownership/management of such services? Donors should be consistent in

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their policies--if they support private sector development in the Occupied Territories, they should be prepared to invest in, or facilitate such development.

8. Given the current deteriorating economic situation what is the realistic potential for donors to consider immediate support for a large-scale public works program? Such a program--which could be comparable to that of the Civilian Conservation Corps (CCC) in the U.S. in the 1930s (and presently under consideration for adaptation by the incoming U.S. administration) focus on small- and medium-scale physical infrastructure projects (e.g., farm to market roads and environmental clean-up or protection). Moreover, the economic crisis would seem to call to developing a formalized social safety net--the absence of which helps to foster social disequilibrium in the Occupied Territories. Such a safety net could be comparable to those being designed by the World Bank for several developing countries; however, such programs require large infusions of financing--are donors prepared to provide such financing?

E. TOWARD SUSTAINABLE DEVELOPMENT

The small population base of the Occupied Territories and other factors suggest that economic growth depends on export-oriented industry and domestic service enterprises (e.g., tourism); this builds on the historical mercantile tradition of Palestinians. In any case, such development must be as diversified as possible (and as practical), in order to lessen the dependence on one or another source of financing for economic development. It must also be based on improvements in the capacity of Palestinians to compete in the increasingly competitive and dramatically changing global economy and to manage their domestic quasi-public and private institutions.

Development planning in the Occupied Territories is taking place in the context of a dynamic and shifting political environment. When the preparation of these sectoral analyses was initiated in December, 1991, the Peace Talks had only just begun, and a different political party was in office in Israel. Since then, several sessions of the Peace Talks have taken place (with some progress, at least at the technical level), and elections in Israel and the United States (a co-sponsor of the Peace Talks) have resulted in changes in government in both countries.

In order to ensure that they are contributing most positively to the process of economic and social development in the Occupied Territories, donors should increasingly turn their attention to support of policies, programs and projects which are linked across sectors in ways which most effectively make use of the resources available. Moreover, in the event of political change, it will be necessary for donors and international private voluntary organizations (PVOs) currently operating projects in the West Bank and Gaza Strip (and most importantly for UNRWA) to recognize that they most likely will have different roles in the process of planning and implementing economic development and social programs in the area.

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In the long run donors will need to recognize that the eventual fulfillment of great expectations of economic growth in the Occupied Territories will require infusion of sufficient funds for operating costs and capital investment, as well as technical assistance and training help create jobs and develop a healthy, competitive economy. If donors cannot provide a sufficient quantity of such funds directly, then facilitating access to funds from other appropriate sources should become a priority. Donors should also encourage cooperation--economic and otherwise--within the Middle East region, and in particular between Israel and the Occupied Territories. Such cooperation would strengthen the capacity of the countries in the region (and of the Occupied Territories) to compete in the changing global marketplace. It may also contribute to political and social stability in the area and in the Occupied Territories specifically.

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Table 1

Summary of Recommendations by Sector

Agriculture	Education & Training	Finance & Credit	Health	Industry & Enterprise	Infrastructure (Communications, Electrification, Transportation)	Trade	Water & Sanitation
ASSUMES STATUS QUO							
Short-term relief program including agricultural feeder roads, land reclamation Improve capacity of Palestinian institutions to plan, manage & evaluate programs & projects Improve & expand marketing information & support systems; coordinate with other sectors, (e.g., industry for food processing) Expand use of improved irrigation systems making better use of scarce water resources Expand and improve crop varieties & livestock production (to enhance marketing poten., improv. land & water use) Develop industrial sector in Gaza, in lieu of expansion of agricultural sector, in view of water shortage Expand capacity of Palestinian research & extension service Expand & improve linkages between Palestinian institutions and foreign public & private sector agricultural research & development institutions Develop/expand an agricultural data & information clearinghouse	Improve computer, laboratory & library facilities at public & private K-12 level & post-secondary educational & training institutions Expand & improve private sector initiatives in literacy & distance learning Physically rehabilitate existing K-12 schools & construct new schools as necessary; include facilities for recreation & community-based education in rehabilitated & new schools Revise K-12 and post-secondary curriculum, including ensuring linkage of curriculum to development needs and employment opportunities Expand & improve teacher training in educational theory & practice & in grade levels & subject areas for which they are responsible Expand availability of new educational technologies at K-12 & post-secondary levels & train teachers in use of same Improve management of educational & training institutions at all levels Expand capacity of post-secondary institutions to provide short-term training in marketable skill areas Expand capacity of post-secondary institutions to conduct applied research & development projects for the private sector (including expanding facilities & training of faculty) Develop/expand an education & training data and information clearinghouse Develop & improve the design & use of educational assessment materials for use with teachers and students Conduct an assessment of university programs to identify potential areas for regional coordination and resource sharing	Expand community-based savings & credit institutions (e.g., credit circles) Improve capacity of banks, credit institutions & insurance companies to plan, manage & evaluate their activities Develop finance & credit data and information Clearinghouse Expand credit for the productive private sector (e.g., loan guarantees) Develop the management infrastructure for the finance & credit sector (e.g., policy instruments for financial regulation & standardized credit applications) Conduct study of capacity of existing inst. to manage larger loans to the productive sector Conduct study of & plan for broadbased insurance needs Improve capacity of Palestinian institutions to carry out planning & devise policies & programs at the macroeconomic and microeconomic levels	Strengthen health systems' planning & management at all levels of the health care system Improve financial management capacity & potential for cost recovery at all levels & types of facilities Expand facility, regional and inter-regional health planning & needs assessment activities Expand & improve capacity of institutions to collect, analyze & disseminate data & information for expanded health educational programs Conduct an assessment of existing health research studies & data bases; disseminate results Develop & implement facility and cross-facility health management & information systems Expand continuing education for health care providers to help ensure quality of care Develop/adopt practice guidelines for all provider categories & levels of care Expand primary & secondary level care, community-based rehabilitation services, & mental health services to underserved areas Plan and implement regional systems care, to make the most effective and efficient use of scarce resources & improve care delivery Improve existing health data & clearinghouses Develop capacity of Palestinian facilities & health care providers to provide services which are not available in the O.T., IF doing so would improve effectiveness & efficiency	(See finance & credit for related recommendations) Enhance capacity of industry & enterprise in terms of productivity, quality control, management (financial, personnel, etc.) Develop & expand linkages between Palestinian industry & enterprise foreign universities & research institutions Conduct comprehensive industry/enterprise inter- and intra-regional planning (including for feasibility/appropriateness of industrial zones) Strengthen institutions which support industry & enterprise (e.g., Industrial Union(s), Chambers of Commerce, economic development institutions Develop/expand industry/enterprise data & information systems & clearinghouses (e.g., marketing information systems) Expand capacity for and conduct applied research studies of productivity & quality control, including directly & indirectly related factors (e.g., labor/management relations, occupational & environmental health practices, quality control mechanisms) Design & expand support systems for industry/enterprise (e.g., quality control, product testing, consultation for environmental & occupational health & safety, trade) Improve ergonomics and productive capacity of existing and selected new industries/enterprises	(See education for related recommendations.) Improve managerial & planning of Palestinians currently or potentially responsible for infrastructure projects Upgrade capacity of skilled and semi-skilled workers in infrastructure (focusing on skills in new technologies) Develop computer-based information systems for planning & management of infrastructure projects Upgrade & expand road networks, particularly key market access roads & roads in villages with little or no access to areas having basic services Develop regional infrastructure plans, by subsector (e.g., electrification), focusing on most cost-effective systems, & expand community involvement in infrastructure planning Conduct demonstration projects on alternative energy sources Improve capacity of public, quasi-public & private organizations to design/adapt & manage infrastructure financial systems & to recover costs of related services Expand electrification to villages without services & upgrade existing equipment Develop/adapt certification & standards for physical infrastructure personnel (e.g., electrification), for use in initial and on-going assessment of skills among municipal & quasi-public employees	(See agriculture & industry for related recommendations.) Conduct marketing studies & surveys to generate require trade-related data Expand & improve linkages between Palestinian firms and trade inst. & foreign business & trade and related institutions Expand & improve economic infrastructures which improve domestic & import markets (e.g., capital projects & systems for monitoring quality control of products) Expand Palestinian trade missions & related short-term visits to foreign countries Develop trade-related data & information systems & clearinghouses (linked to regional & international information systems) Upgrade capacity of Palestinian firms to have competitive advantages (e.g., in new product development, quality control requirements of trading partners, marketing techniques) The U.S. should explore relaxation of any trade barriers on Palestinian products & implementation of favorable trade regulations	Design & implement small-scale water & sanitation projects, in the West Bank & Gaza Strip, using the most appropriate technologies Immediate design & implementation of wastewater recycling, large-scale water-catchment & other related projects in the Gaza Strip Design & implement small- and medium-scale sanitation projects Upgrade capacity of Palestinian institutions to conduct water quality & other environmental studies Conduct water, air and other environmental studies, focusing initially on high risk areas Improve capacity of municipal & private companies to plan, manage & evaluate water & sanitation services & systems, including improving their capacity to recover costs of services Improve capacity of skilled & semi-skilled employees, focusing on new technologies & processes Conduct study of water pricing & utilization Develop/improve water & sanitation information systems Develop a water and sanitation data & information clearinghouses
ASSUMES POLITICAL CHANGE							
Expand support for graduate training Expand support for improved buildings & laboratories for educational institutions	Expand construction of new public schools, as necessary Expand research & development related to the productive private sector	Expand credit for productive private sector through loan guarantees, etc. through donor agencies, international, regional and national banking institutions Expand banking & credit services (branches of existing banks or institutions or new banks or institutions) to geographic areas in which no such services exist	Support integrated health systems Support public & private health financing mechanisms	Design & develop industrial zones, determined to be appropriate (see above) Adapt/develop new products through loans or small grants	Expand communications systems, using appropriate, low-cost technologies Expand integrated electrification system, using low-cost appropriate technologies Expand road network & link with Israeli & Jordanian road networks	Develop multi-national trade data & information systems Develop/expand free trade zones	Plan & implement large-scale water & sanitation projects, as necessary Expand support for multi-national water & sanitation projects in Middle East

NOTE: This table does not include recommendations concerning donor coordination, nor those related to removal of bureaucratic or other constraints to development.

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Table 2.
Linkage Between Sectoral Recommendations & Development Goals & Objectives

Recommended Sectoral Activities	GOAL: Improved economic & social well-being of the population	Objectives: Increased productivity & marketing of agricultural & manufactured goods	Strengthened capacity of both public & private sector institutions to plan & manage on-going & development policies, programs & projects	Improved educational attainment, health, and participation in the workforce on the part of the population	Improved use of renewable resources
Across Sectors					
Elimination or alleviation of bureaucratic and other constraints	x	x	x	x	x
Strengthening the capacity of Palestinian public and private sector institutions to plan, manage & evaluate policies, programs & projects at the national, regional and local level	x	x	x	x	x
Improving the development, diffusion, use access to, evaluation & acquisition of technology in the public and private sectors	x	x	x	x	x
Improving management of and access to use of credit and financial services.	x	x	x		x
Improving the collection, analysis & distribution of data & information for use in public and private sector programs & projects, as well as access to relevant GOI and other data and information	x	x	x	x	x
Improving physical infrastructure & water & sanitation systems which support the public & private sectors & meet basic human needs	x	x	x		x
Agriculture					
Short-term relief program, including agricultural feeder roads and land reclamation	x	x		x	x
Improve capacity of Palestinian institutions to plan, manage & evaluate programs & projects	x	x	x	x	
Improve & expand marketing information & support systems	x	x	x	x	x
Expand use of improved irrigation systems, better use of scarce water resources	x	x	x	x	x
Expand and improve crop varieties & livestock production (to enhance marketing potential, improve land and water use)	x	x		x	x
Develop industrial sector in Gaza, in lieu of expansion of agricultural sector, in view of water shortage	x	x		x	x
Expand capacity of Palestinian research & extension services	x	x	x	x	
Expand & improve linkages between Palestinian institutions and foreign public & private sector agricultural research & development institutions	x	x	x	x	x
Develop/expand an agricultural data & information clearinghouse	x	x	x	x	x
Expand support for improved buildings & laboratories for agricultural training	x	x		x	
Expand support for graduate training	x	x	x	x	x

Table 2, continued
Linkage Between Sectoral Recommendations & Development Goals & Objectives

Recommended Sectoral Activities	GOAL: Improved economic & social well-being of the population	Objectives: Increased productivity & marketing of agricultural & manufactured goods	Strengthen the capacity of public & private sector institutions to plan & manage on-going & development policies, programs & projects	Improved educational attainment, health, and participation in the workforce on the part of the population	Improved use of renewable resources
Education					
Improve computer, laboratory & library facilities facilities at public & private K-12 level & post-secondary education & training institutions	x	x	x	x	
Expand & improve private sector initiatives in literacy & distance learning	x	x	x	x	
Physically rehabilitate existing K-12 schools & construct new schools as necessary; include facilities for recreation & community-based education in rehabilitated & new schools	x	x	x	x	
Revise K-12 and post-secondary curriculum, including ensuring linkage of curriculum to development needs & employment opportunities	x	x	x	x	
Expand & improve teacher training in educational theory & practice & in grade levels & subject areas for which they are responsible	x	x	x	x	
Expand availability of new educational technologies at K-12 & post-secondary levels & train teachers in use of same	x	x	x	x	
Improve management of educational & training institutions at all levels	x	x	x	x	
Expand capacity of post-secondary institutions to provide short-term training in marketable skill areas	x	x	x	x	
Expand capacity of post-secondary institutions to conduct applied research & development projects for the private sector (including expanding facilities & training of faculty)	x	x	x	x	
Develop/expand an education & training data and information clearinghouse	x	x	x	x	
Develop & improve the design & use of educational assessment materials for use with teachers and students	x	x	x	x	
Conduct an assessment of university programs to programs to identify potential areas for identify potential areas for regional coordination and resource sharing	x	x	x	x	
Expand construction of new public schools, as necessary	x			x	
Expand research & development related to the productive private sector	x	x	x	x	x

Table 2, continued
Linkage Between Sectoral Recommendations & Development Objectives

Recommended Sectoral Activities	GOAL: Improved economic & social well-being of the population	Objectives: Increased productivity & marketing of agricultural & manufactured goods	Strengthened capacity of both public & private sector institutions to plan & manage on-going & development policies, programs & projects	Improved educational attainment, health, and participation in the workforce on the part of the population	Improved use of renewable resources
Finance & Credit					
Expand community-based savings & credit institutions (e.g., credit circles)	x	x		x	
Improve capacity of banks, credit institutions & insurance companies to plan, manage & evaluate their activities	x	x			
Develop finance & credit data and information clearinghouse	x	x	x	x	
Expand credit for the productive private sector (e.g., loan guarantees)	x	x	x	x	
Develop the management infrastructure for the finance & credit sector (e.g., policy instruments for financial regulation & standardized credit applications)	x	x	x	x	
Conduct study of capacity of existing institutions to manage larger loans to the productive sector	x	x	x	x	
Conduct study of & plan for broadbased insurance needs	x	x	x	x	
Improve capacity of Palestinian institutions to carry out planning & devise policies & programs at the macroeconomic & microeconomic levels	x	x	x	x	x
Expand credit for productive private sector through loan guarantees, etc., through donor agencies, and international, regional and national banking institutions	x	x	x	x	
Expand banking & credit services (branches of existing banks or credit unions or new banks or credit institutions to geographic areas in which no such services exist	x	x	x	x	

Table 2, continued
Linkage Between Sectoral Recommendations & Development Objectives

Recommended Sectoral Activities	GOAL: Improved economic & social well-being of the population	Objectives: Increased productivity & marketing of agricultural & manufactured goods	Strengthened capacity of both public & private sector institutions to plan & manage on-going & development policies, programs & projects	Improved educational attainment, health, and participation in the workforce on the part of the population	Improved use of renewable resources
Health					
Strengthen health systems' planning & management at all levels of the health care system	x		x	x	x
Improve financial management capacity & potential for cost recovery at all facility levels	x		x	x	
Expand facility, regional and inter-regional health planning & needs assessment activities	x		x	x	
Expand & improve capacity of institutions to collect, analyze & disseminate data & information for expanded health education programs (incl. disease prevention & occupational and environmental health, for example)	x		x	x	
Conduct an assessment of existing health research studies & data bases; disseminate results	x		x	x	x
Develop & implement facility & cross-facility health management & information systems	x		x	x	
Expand continuing education for health care providers to help ensure quality of care	x		x	x	x
Develop/adapt practice guidelines for all provider categories & levels of care	x		x	x	x
Expand primary & secondary level care, community-based rehabilitation & mental health services to underserved areas	x		x	x	x
Plan and implement regional systems care, to make the most effective & efficient use of scarce resources & improve care delivery	x		x	x	x
Improve existing health data & clearinghouses	x		x	x	x
Develop capacity of Palestinian health facilities & to offer diagnostic & treatment services not available in the O.T., IF doing so would improve effectiveness efficiency of the system	x		x	x	
Support integrated health systems	x		x	x	
Support public & private health financing mechanisms	x		x	x	

Table 2, continued
Linkage Between Sectoral Recommendations & Development Objectives

Recommended Sectoral Activities	GOAL Improved economic & social well-being of the population	Objectives Increased productivity & marketing of agricultural & manufactured goods	public & private sector institutions to plan & manage on-going & development policies, programs & projects	Improved educational attainment, health, and participation in the workforce on the part of the population	Improved use of renewable resources
Industry & Enterprise					
Enhance capacity of industry & enterprise in terms of productivity, quality control, management (financial, personnel, etc.) & research	x	x	x	x	
Develop & expand linkages between Palestinian industry & enterprise & foreign universities research institutions	x	x	x	x	x
Conduct comprehensive industry/enterprise inter- and intra-regional planning (including for feasibility/appropriateness of industrial zones)	x	x	x	x	x
Strengthen institutions which support industry & enterprise (e.g., Industrial Unions, Chambers of Commerce, & economic development institutions	x	x	x	x	
Develop/expand industry/enterprise data & information systems & clearinghouses (e.g., marketing information systems)	x	x	x	x	x
Expand capacity for and conduct productivity & quality control, including directly & indirectly related factors (e.g., labor/management relations, occupational & environmental health practices & quality control mechanisms)	x	x	x	x	
Design & expand support systems for industry/ enterprise (e.g., quality control, product testing, consultation for occupational health, trade	x	x	x	x	x
Improve ergonomics and productive capacity of existing and selected new industries/enterprises	x	x	x	x	
Design & develop industrial zones, if determined to be appropriate (see above)	x	x	x	x	x
Adapt/develop new products through loans or small grants	x	x	x	x	x

Table 2, continued
Linkage Between Sectoral Recommendations & Development Objectives

Recommended Sectoral Activities	GOAL Improved economic & social well-being of the population	Objectives Increased productivity & marketing of agricultural & manufactured goods	public & private sector institutions to plan & manage on-going & development policies, programs & projects	Improved educational attainment, health, and participation in the workforce on the part of the population	Improved use of renewable resources
Infrastructure (Communications, Electrification, Transportation)					
Improve managerial & planning capacity of Palestinians currently or potentially responsible for infrastructure projects	x		x	x	x
Upgrade capacity of skilled and semi-skilled workers in infrastructure	x		x	x	x
Develop computer-based information systems for planning & management of infrastructure projects	x		x	x	x
Upgrade & expand road networks, particularly key market access roads & roads in villages with little or no access to areas having basic services	x		x	x	x
Develop regional infrastructure plans, by subsector, focusing on most cost-effective systems, and expand community involvement in infrastructure ping.	x		x	x	x
Conduct demonstration projects on alternative energy sources	x		x	x	x
Improve capacity of public, quasi-public & private organizations to design/adapt & manage infrastructure financial systems & to recover costs of related services	x		x	x	x
Expand electrification to villages without services & upgrade existing equipment	x		x	x	x
Develop/adapt certification & standards for standards for physical infrastructure personnel for use in initial and on-going assessment of skills among municipal & quasi-public employees	x		x	x	x
Expand communications systems, using appropriate, low-cost technologies	x		x	x	x
Expand integrated electrification system, using low-cost, appropriate technologies	x		x	x	x
Expand road network & link with Israeli & Jordanian road networks	x		x	x	x

Table 2, continued
Linkage Between Sectoral Recommendations & Development Objectives

Recommended Sectoral Activities	GOAL Improved economic & social well-being of the population	Objectives Increased productivity & marketing of agricultural & manufactured goods	public & private sector institutions to plan & manage on-going & development policies, programs & projects	Improved educational attainment, health, and participation in the workforce on the part of the population	Improved use of renewable resources
Trade					
Conduct marketing studies & surveys to generate require trade related data	x	x	x	x	
Expand & improve linkages between Palestinian firms and trade institutions & foreign institutions, firms, & business & trade institutions	x	x	x	x	
Expand & improve economic infrastructures which improve domestic & import markets (e.g., capital projects & systems for monitoring quality control)	x	x	x	x	
Expand Palestinian trade missions & related short-term visits to foreign countries	x	x	x	x	
Develop trade-related data & information systems & clearinghouses (linked to regional & international information systems)	x	x	x	x	
Upgrade capacity of Palestinian firms to have competitive advantages (e.g., in new product development, quality control requirements of trading partners, marketing techniques)	x	x	x	x	
Develop multi-national trade data & information systems	x	x	x	x	
Develop/expand free trade zones	x	x	x	x	
Water & Sanitation					
Design & implement small-scale water & sanitation projects in the West Bank & Gaza Strip, using the most appropriate technologies	x	x	x	x	x
Immediate design & implementation of wastewater recycling, large-scale water-catchment & other related projects in the Gaza Strip	x	x	x	x	x
Design & implement small- and medium-scale sanitation projects	x	x	x	x	x
Upgrade capacity of Palestinian institutions to conduct water quality & other environmental studies	x	x	x	x	x
Conduct water, air and other environmental studies, focusing initially on high risk areas	x	x	x	x	x
Improve capacity of municipal & private companies to plan, manage & evaluate water & sanitation services & systems, including improving their capacity to recover costs of services	x		x	x	x
Improve capacity of skilled & semi-skilled employees, focusing on technologies & processes	x		x	x	x
Conduct study of water pricing & utilization	x		x	x	x
Develop/improve water & sanitation information systems	x		x	x	x
Develop a water and sanitation data & information clearinghouse	x		x	x	x
Plan & implement large-scale water & sanitation projects, as necessary	x		x	x	x
Expand support for multi-national water & sanitation projects in Middle East	x		x	x	x